MADRIX ORION User Manual

[Hardware User Guide]

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MADRIX
LIGHTING CONTROL

//PART 1

Overview

1 Overview

Topics Of This Chapter

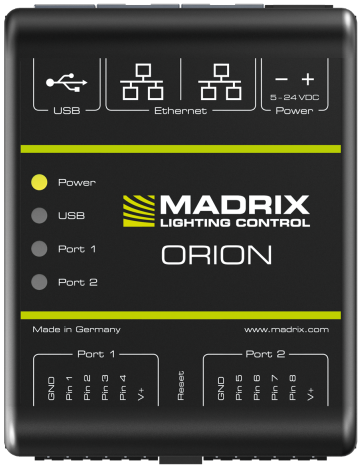
- Introduction
- Hardware Features

1.1 Introduction

This topic includes:

- MADRIX ORION

MADRIX ORION



MADRIX ORION adds a whole new level of interaction and control to your project.

The MADRIX ORION is specifically designed as a general-purpose input device for analog input and Ethernet-based output for remote control and interactivity.

1.2 Hardware Features

This topic includes:

- Important Note

- Using A 3rd-Party Controller
- LED Status Codes
- Daisy-Chain Support
- Reset To Factory Default Settings
- Initiate Poll

Important Note

- **Make sure to read the provided MADRIX ORION Technical Manual & Quick Start Guide first!**
  Find it in your product box or download it from »help.madrix.com

Using A 3rd-Party Controller

MADRIX ORION is a standard network node for Art-Net or Streaming ACN. Because of this, you can use the device with applications, consoles, desks, or controllers that are compatible with Art-Net or Streaming ACN to receive data via Ethernet network.

LED Status Codes

The following tables describe the LED status codes of the device.

STATUS	STATUS LED POWER
powered off	Power not connected. > The device has no power.
Permanently green	Connected to power. > The power is on.
Blinking green	Bootloader activated. > Reset device / upload firmware.

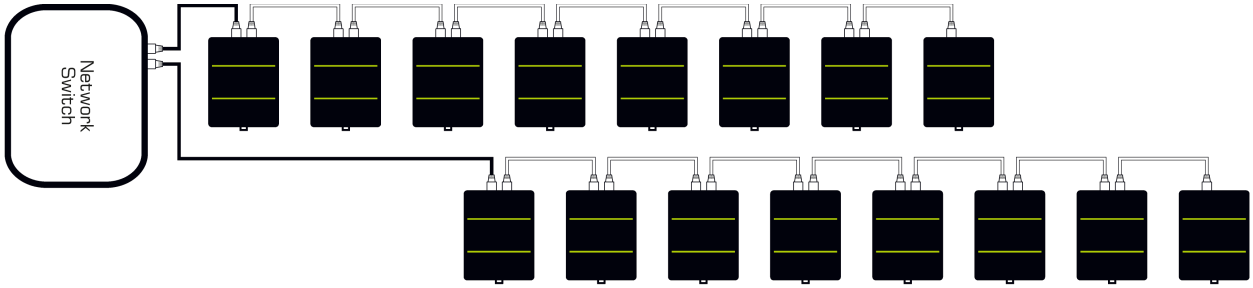
STATUS	STATUS LED USB
powered off	USB not connected.
Red + blinking green	Communicating over USB. > Sending or receiving data over USB. The USB port works.
Fading between red +green	Connected to USB; Drivers installed correctly. > No data is sent over USB.
Orange	Connected to USB; No drivers installed. > Reinstall software and drivers or try a different USB port.

STATUS	STATUS LED PORT 1	STATUS LED PORT 2
powered off	No data is sent.	No data is sent.
Blinking green	Receiving data / changes. > The input port works.	Receiving data / changes. > The input port works.

STATUS	STATUS LEDS ETHERNET PORTS
Green off	10 MBit/s connected.
Green on	100 MBit/s connected.
Orange on	Network connected.
Orange blinking	Sending or receiving data. > The Ethernet port works.

Daisy-Chain Support

The device features 2 separate Ethernet network ports. Either one is fully functionally for IN and OUT and can be used for the data connection without using a separate network switch or router.



Please note:

- It is recommended to connect a maximum of 8 units after one another in a row.
- It is important to set up the correct network universe where each device should send data to.
- If all devices should send to the same universe, it is important to set up the correct DMX channels for each port and device.
- ORION always sends data on the configured universe and channels unless the ports are deactivated.
  Make sure that several devices do not send data on the same DMX channels!
- Make sure to receive data in unicast mode in your receiver.

Reset To Factory Default Settings

Reset Via Reset Button

- **1]** Disconnect all connections from the device [power, data, input].
- **2]** Use a suitable tool to press the reset button [between Port 1 and Port 2].
- **3]** Continue to press the reset button and supply power again over 'Power' or over USB.
- **4]** Continue to press the reset button and wait until all status LEDs of the device flash repeatedly or wait 10 seconds.
  [Simply repeat these steps should the process fail.]

Reset Via Ethernet [Web Configuration]

- **1]** Connect MADRIX ORION to power.
  [Please see safety instructions in the ***MADRIX ORION Technical Manual & Quick Start Guide***!]
- **2]** Connect MADRIX ORION and your computer to the same Ethernet network.
- **3]** Assign correct network settings for your computer in the operating system.
  [Recommended default settings: IP address 10.0.0.1 / Subnet mask 255.0.0.0]
- **4]** Open your web browser and enter the IP address of MADRIX ORION. The built-in web configuration tool will be launched.
  [You can find the default IP address on the side of the device.]
- **5]** Click ***Reset***
  Learn more »**Web Configuration [Ethernet]**

Reset Via USB Or Ethernet [MADRIX HARDWARE MANAGER]

- **1]** Connect MADRIX ORION to power.
  [Please see safety instructions in the ***MADRIX ORION Technical Manual & Quick Start Guide***]
- **2]** Connect MADRIX ORION to your computer via USB or Ethernet.
  [You can use the provided USB cable or a separate network cable is required.]
- **3]** Start the separate ***MADRIX HARDWARE MANAGER***
  [In Windows 10, go to ***Start > MADRIX HARDWARE MANAGER > MADRIX HARDWARE MANAGER***
- **4]** Select a device/devices in the list.
- **5]** ***Right Mouse Click > Restore Factory Default Settings***
  [Wait for the reset process to end [usually it takes only seconds.]
  Learn more »**MADRIX HARDWARE MANAGER [USB / Ethernet]**

Initiate Poll

During normal operation, quickly pressing the Reset button sends an Art-Net PollReply and a MADRIX PollReply for device discovery to the network.

MADRIX
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//PART 2

Device Configuration

2 Device Configuration

This topic includes:

- Overview
- Topics Of This Chapter

Overview

- **Web Configuration:** The built-in web configuration is the main way of configuring your devices. By using a standard web browser, you gain quick access to all device settings.
- **MADRIX HARDWARE MANAGER:** This software is available separate. You can use it specifically to manage MADRIX hardware products, including their basic configuration and firmware updates.

Topics Of This Chapter

- Web Configuration [Ethernet]
- MADRIX HARDWARE MANAGER [USB / Ethernet]

2.1 Web Configuration [Ethernet]

This topic includes:

- Configuration Using A Web Browser
- Pin Input Configuration
- DMX Channel Configuration
- Analog Input To Network

Configuration Using A Web Browser

When connected to Ethernet network, you can easily configure MADRIX ORION using the built-in web configuration interface.

You have 2 options to access the web interface. Both, ORION and your computer, need to be in the same network.

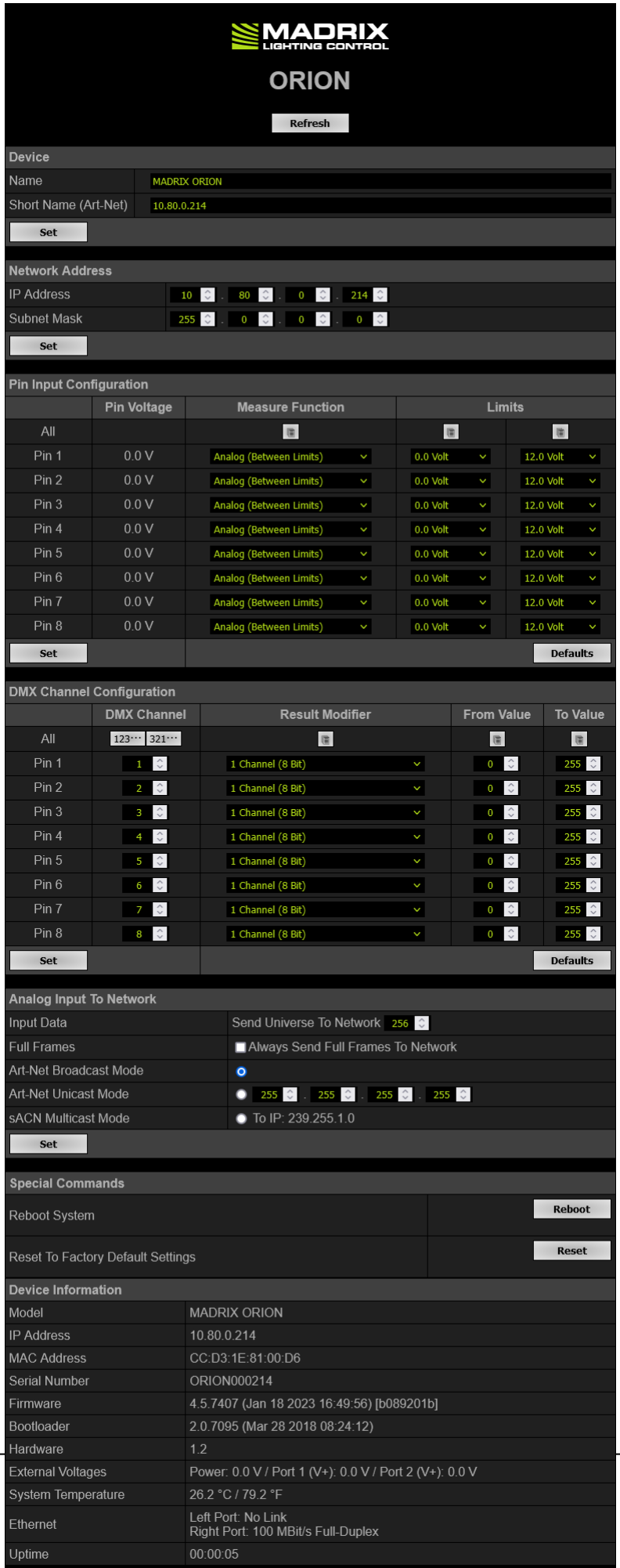
A] Using a standard web browser:

- Connect MADRIX ORION and your computer to the same network.
- Assign correct network settings for your PC in the Windows operating system.
  [Recommended default settings: IP address 10.0.0.1 / Subnet mask 255.0.0.0]
  [Please note: Your devices and the sender, such as the PC that runs MADRIX 5, need to have the same subnet mask!]
- Open your web browser and enter the IP address of MADRIX ORION.
  [You can find the default IP address on the back side of the device.]
- The web configuration page will be launched. Now, you have access to various information and settings.

B] Using the MADRIX 5 Software:

- Connect MADRIX ORION and your computer to the same network.
- Assign correct network settings for your PC in the Windows operating system.
  [Recommended default settings: IP address 10.0.0.1 / Subnet mask 255.0.0.0]
- Go to the menu ***Tools > MADRIX Device Configuration...***
  [Keyboard shortcut: ***Ctrl+Alt+L***]
- Select your MADRIX ORION device in the list.
- Click 

- Your default web browser will open and the web configuration page will be launched. Now, you have access to various information and settings.


MADRIX
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ORION
Refresh
Device
Name
MADRIX ORION
Short Name (Art-Net)
10.80.0.214
Set
Network Address
IP Address
10 . 80 . 0 . 214
Subnet Mask
255 . 0 . 0 . 0
Set
Pin Input Configuration
Pin Voltage
Measure Function
Limits
All
Pin 1 0.0 V Analog (Between Limits) 0.0 Volt 12.0 Volt
Pin 2 0.0 V Analog (Between Limits) 0.0 Volt 12.0 Volt
Pin 3 0.0 V Analog (Between Limits) 0.0 Volt 12.0 Volt
Pin 4 0.0 V Analog (Between Limits) 0.0 Volt 12.0 Volt
Pin 5 0.0 V Analog (Between Limits) 0.0 Volt 12.0 Volt
Pin 6 0.0 V Analog (Between Limits) 0.0 Volt 12.0 Volt
Pin 7 0.0 V Analog (Between Limits) 0.0 Volt 12.0 Volt
Pin 8 0.0 V Analog (Between Limits) 0.0 Volt 12.0 Volt
Set
Defaults
DMX Channel Configuration
DMX Channel
Result Modifier
From Value
To Value
All
123··· 321···
Pin 1 1 1 Channel (8 Bit) 0 255
Pin 2 2 1 Channel (8 Bit) 0 255
Pin 3 3 1 Channel (8 Bit) 0 255
Pin 4 4 1 Channel (8 Bit) 0 255
Pin 5 5 1 Channel (8 Bit) 0 255
Pin 6 6 1 Channel (8 Bit) 0 255
Pin 7 7 1 Channel (8 Bit) 0 255
Pin 8 8 1 Channel (8 Bit) 0 255
Set
Defaults
Analog Input To Network
Input Data
Send Universe To Network 256
Full Frames
Always Send Full Frames To Network
Art-Net Broadcast Mode
Art-Net Unicast Mode
255 . 255 . 255 . 255
sACN Multicast Mode
To IP: 239.255.1.0
Set
Special Commands
Reboot System
Reboot
Reset To Factory Default Settings
Reset
Device Information
Model MADRIX ORION
IP Address 10.80.0.214
MAC Address CC:D3:1E:81:00:D6
Serial Number ORION000214
Firmware 4.5.7407 (Jan 18 2023 16:49:56) [b089201b]
Bootloader 2.0.7095 (Mar 28 2018 08:24:12)
Hardware 1.2
External Voltages Power: 0.0 V / Port 1 (V+): 0.0 V / Port 2 (V+): 0.0 V
System Temperature 26.2 °C / 79.2 °F
Ethernet Left Port: No Link
Right Port: 100 MBit/s Full-Duplex
Uptime 00:00:05

Device

Name - Allows you to change the main label of the device by entering a name. The default setting is MADRIX ORION.

- This refers to LongName within Art-Net with a maximum of 64 characters.
- This refers to Source Name within sACN with a maximum of 63 characters.
- This refers to the communication with the MADRIX 5 Software over Ethernet network or USB.

Short Name (Art-Net) - Allows you to change the ShortName identifier used by Art-Net. The default setting is the IP address of the device.

Confirm with ***Set***

Network Address

You can change the basic network device settings.
Confirm with ***Set***

- ***IP Address***
- ***Subnet Mask***
  [Please note: Your devices and the sender, such as the PC that runs MADRIX 5, need to have the same subnet mask!]

Pin Input Configuration

This section is an important part of the configuration.
Please see below.

DMX Channel Configuration

This section is an important part of the configuration.
Please see below.

Analog Input To Network

This section is an important part of the configuration.
Please see below.

Special Commands

Reboot - Reboot System - Restarts the device completely. [The website will automatically be reloaded after a few seconds.]

Reset - Reset To Factory Default Settings - Restores the original settings of the device. [Since this may change back the IP address to the original setting, the

website will automatically be reloaded after a few seconds and you will automatically be redirected to the correct website and IP address.]

Device Information This section displays various details about the device, including:

- ***Model*** [The device type.]
- ***IP Address*** [The current IP address.]
- ***MAC Address*** [A permanent, unique address.]
- ***Serial Number***
- ***Firmware*** [The current firmware version.]
- ***Bootloader*** [The current bootloader version.]
- ***Hardware*** [The hardware revision.]
- ***External Voltages*** [The current voltage for External Power, Port 1 (V+), and Port 2 (V+).]
- ***System Temperature*** [The current ambient temperature inside the device case.]
- ***Ethernet*** [The current status of the two Ethernet ports.]
- ***Up Time*** [The time that has passed since the last power-cycle or restart.]

Pin Input Configuration

This section is an important part of the configuration. It allows you to specify how the input data is parameterized.

- You can change the settings for each of the 8 input pins individually [***Pin 1*** - ***Pin 8***].
- ***Pin Voltage -*** Shows how much volt is applied at the particular pin.
- ***Measure Function -*** Defines how the input data is parameterized. Confirm with ***Set*** or restore the default values with ***Defaults***. Choose from different options:
-  Sets the value of the first port for all ports for the relevant column.

Disabled	▪ Deactivates the specified pin. ▪ This also frees up DMX channels as well as processing resources. ▪ The more pins are deactivated, the higher the measure frequency can be [12.5 FPS / Hz for 8 pins and up to 100 FPS / Hz for 1 pin].
Analog (Between Limits)	▪ Linearly measures the incoming voltage at the particular pin. ▪ In addition, you can specify the lower and upper limit in which the device measures the analog signal by setting them with help of the ***Current Limit Values***
Digital (Hysteresis Threshold)	▪ Measures the incoming voltage at the particular pin, but interprets it digitally. ▪ The lower and upper limit, which are set by ***Limits***, are used as thresholds. ▪ Once the signal goes below or above those limits, the provided result changes to the low or to the high value accordingly. ▪ Low value and high value are directly set via ***From Value*** and ***To Value*** in the ***DMX Channel Configuration***
Pin Voltage	▪ Measures the incoming voltage at the particular pin. ▪ In addition, you can specify the lower and upper limit in which the device measures the analog signal by setting them with help of the ***Limits*** ▪ The result will be provided as decimal value. ▪ If you are using 8 bit with 1 DMX channel as ***Result Modifier*** in the ***DMX Channel Configuration***, the main value before the comma will be provided as result (e.g. 3 Volt). ▪ If you are using 16 bit with 2 DMX channels as ***Result Modifier*** in the ***DMX Channel Configuration***, both values, before and after the comma, will be provided as result (e.g. 3.12 Volt).
External Voltage (V+)	▪ Measures the incoming voltage at Power. ▪ In addition, you can specify the lower and upper limit in which the device measures the analog signal by setting them with help of the ***Limits*** ▪ The result will be provided as decimal value. ▪ If you are using 8 bit with 1 DMX channel as ***Result Modifier*** in the ***DMX Channel Configuration***, the main value before the comma will be provided as result (e.g. 3 Volt). ▪ If you are using 16 bit with 2 DMX channels as ***Result Modifier*** in the ***DMX Channel Configuration***, both values, before and after the comma, will be provided as result (e.g. 3.12 Volt).

Counter (Hysteresis Threshold)	▪ Measures the incoming voltage at the particular pin, but interprets it digitally. ▪ The lower and upper limit, which are set by ***Limits***, are used as thresholds. ▪ Once the signal goes below or above those limits, the provided result is increased by 1. ▪ Low value and high value are directly set via ***From Value*** and ***To Value*** in the ***DMX Channel Configuration***
Count Per Second (Slow)	▪ Measures the incoming voltage at the particular pin, but interprets it digitally. ▪ The lower and upper limit, which are set by ***Limits***, are used as thresholds. ▪ Once the signal goes below or above those limits, it is counted towards the provided result per second. ▪ Low value and high value are directly set via ***From Value*** and ***To Value*** in the ***DMX Channel Configuration*** ▪ Due to the processing, only signals that result in a maximum of 100 counts and are thus slower than 50 FPS (< 50 Hz) can be measured.
Count Per Second (Fast)	▪ Measures the incoming voltage at the particular pin, but interprets it digitally. ▪ The lower and upper limit, which are set by ***Limits***, are used as thresholds. ▪ Once the signal goes below or above those limits, it is counted towards the provided result per second. ▪ Low value and high value are directly set via ***From Value*** and ***To Value*** in the ***DMX Channel Configuration*** ▪ The device exclusively monitors this particular pin for a quarter of a second. Thus, very high counts can be possible. The count will then be multiplied by 4 and provided as result in FPS /Hz.
Beats Per Minute (BPM)	▪ Measures the incoming voltage at the particular pin, but interprets it digitally. ▪ The lower and upper limit, which are set by ***Limits***, are used as thresholds. ▪ Once the signal goes below or above those limits, it is counted towards the provided result per second. ▪ Low value and high value are directly set via ***From Value*** and ***To Value*** in the ***DMX Channel Configuration*** ▪ The the device monitors the time between low and high threshold counts and recalculates them to FPS / Hz.
Signal Slope Detections	▪ Measures the incoming voltage at the particular pin, but interprets it digitally. ▪ The lower and upper limit, which are set by ***Limits***, are used as thresholds. ▪ Once the signal goes below or above those limits, it is counted towards the provided result per second.

- Low value and high value are directly set via ***From Value*** and ***To Value*** in the ***DMX Channel Configuration***
- The device monitors each low and high threshold count and sets the provided result for 1 second to the ***To Value***. Afterwards, the provided result will be set to the ***From Value*** again.
- Due to the processing, it makes it possible to reliably detect very short impulses.

Time Interval (Short)

- Measures the incoming voltage at the particular pin, but interprets it digitally.
- A 16-bit counter continuously counts up the milliseconds [ms].
- The current value [time interval] is always being sent out on 2 DMX channels [0 to 255 coarse, 0 to 255 fine]. Fine is counted up first.
- The lower and upper limit, which are set by ***Limits***, are used as thresholds.
- When triggered via the input pin and once the signal goes below the minimum limit, it is being registered as a positive signal [flank]. That is why the minimum limit should be > 0 V.
- If a positive signal [flank] is being registered, the counter is reset to 0.
- If no flank is being registered, the counter counts to a maximum of 65536 [255, 255].
- Time Interval (Short) counts 1/100s of a second and ends at 10.9 minutes.
- When setting the Result Modifier to 8-bit instead of 16-bit, a maximum of 2.55 seconds is being counted.

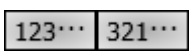
Time Interval (Long)

- Measures the incoming voltage at the particular pin, but interprets it digitally.
- A 16-bit counter continuously counts up the milliseconds [ms].
- The current value [time interval] is always being sent out on 2 DMX channels [0 to 255 coarse, 0 to 255 fine]. Fine is counted up first.
- The lower and upper limit, which are set by ***Limits***, are used as thresholds.
- When triggered via the input pin and once the signal goes below the minimum limit, it is being registered as a positive signal [flank]. That is why the minimum limit should be > 0 V.
- If a positive signal [flank] is being registered, the counter is reset to 0.
- If no flank is being registered, the counter counts to a maximum of 65536 [255, 255].
- Time Interval (Short) counts the seconds and ends at 18.2 hours.
- When setting the Result Modifier to 8-bit instead of 16-bit, a maximum of 255 seconds is being counted.

- ***Limits -*** Defines in which range the analog input signal is received. Confirm with ***Set*** or restore the default values with ***Defaults***. Choose from different options for the minimum value and maximum value:
  - ***0.0 Volt***
  - ***1.0 Volt***
  - ***2.0 Volt***
  - ***3.0 Volt***
  - ***4.0 Volt***
  - ***5.0 Volt***
  - ***6.0 Volt***
  - ***7.0 Volt***
  - ***8.0 Volt***
  - ***9.0 Volt***
  - ***10.0 Volt***
  - ***11.0 Volt***
  - ***12.0 Volt***
  - ***10 % Of V+***
  - ***25 % Of V+***
  - ***50 % Of V+***
  - ***75 % Of V+***
  - ***90 % Of V+***
  - ***100 % Of V+***

DMX Channel Configuration

This section is an important part of the configuration. It allows you to specify how the input data is sent out.

- You can change the settings for each of the 8 input pins individually [***Pin 1*** - ***Pin 8***].
-  Sets the value of the first port for all ports for the relevant column.
- 

Automatically and consecutively numbers all DMX channels in ascending or descending order based on the first pin.

- ***DMX Channel -*** Defines on which channel the data is sent.
  - For 8 Bit - This defines the channel for each individual pin.
  - For 16 Bit - This defines the start channel. 2 channels are required per pin. Make sure to correctly set up all other channels without overlapping channel assignments!
- ***Result Modifier -*** Defines how the data is processed.
  - ***1 Channel (8 Bit)***
  - ***1 Channel (8 Bit), Inverted***
  - ***2 Channels (16 Bit)*** [First Channel: Coarse, Second Channel: Fine]
  - ***2 Channels (16 Bit), Inverted*** [First Channel: Coarse Inverted, Second Channel: Fine Inverted]
  - ***2 Channels (16 Bit), Swapped*** [First Channel: Fine, Second Channel: Coarse]
  - ***2 Channels (16 Bit), Inverted, Swapped*** [First Channel: Fine Inverted, Second Channel: Coarse Inverted]
- ***From Value -*** Defines the DMX value range. This is the minimum value.
- ***To Value -*** Defines the DMX value range. This is the maximum value.

Analog Input To Network

This section is an important part of the configuration. It allows you to specify the network settings.

When data is received through the ports, MADRIX ORION will automatically forward it to Ethernet network.

- ***Input Data > Send Universe To Network -*** ORION receives input data worth up to 16 DMX channels. This setting specifies on which universe the data is sent into the network [Art-Net universe or Streaming ACN universe.]
  - By default, ***256*** is selected. Valid values range from 1 to 256.
- ***Full Frames > Always Send Full Frames To Network -*** If activated, ORION will always send out 512 channels on the specified network universe.
  - ORION automatically sends values of 0 on channels that are not used.
- ***Art-Net Broadcast Mode -*** Activates Art-Net and broadcasts the data into the network.
- ***Art-Net Unicast Mode -*** Activates Art-Net and only sends data to the specified IP address in order to reduce network traffic and bandwidth.
  - Make sure to set up the correct IP address where to send the data to.

- ***sACN Multicast Mode -*** Activates Streaming ACN. This mode multicasts data to the fixed IP address 293.255.1.0 according to the sACN specifications.

2.2 MADRIX HARDWARE MANAGER [USB / Ethernet]

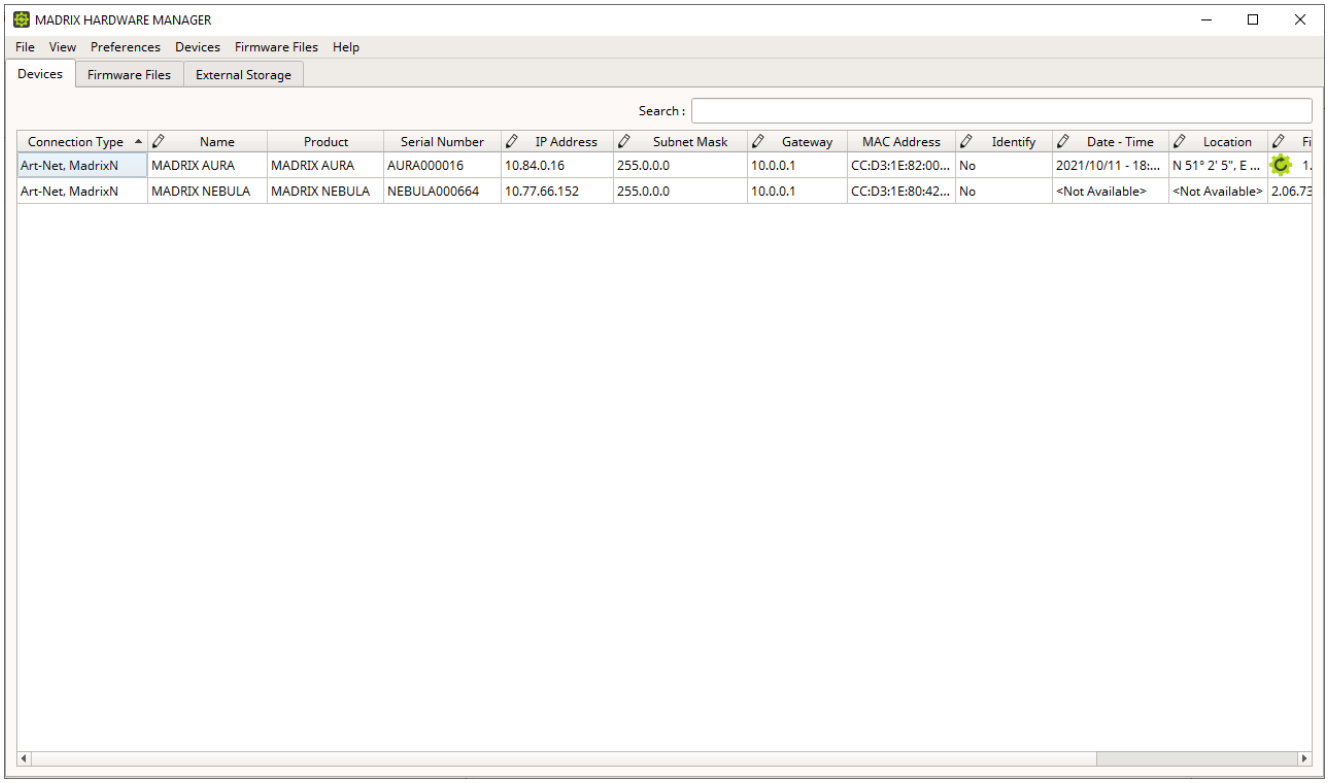
This topic includes:

- Overview
- Device Configuration
- Firmware Updates
- More Information

Overview

MADRIX HARDWARE MANAGER is a software tool that is available separately and allows you to manage MADRIX hardware products.
It can be used for basic device configuration and to update the firmware of your device.

Download from »www.madrix.com



Important Information

- **Either use USB or the Ethernet connection!**

  - When using both connection types devices will be shown with two different entries in the list, which may lead to severe issues when accidentally updating the device over both connections simultaneously.

- **Make sure to -stop- sending control data to your devices when managing them with MADRIX HARDWARE MANAGER.**

  - This refers to input and/or output over Art-Net, sACN, DMX512, etc.

  - Otherwise, changes and updates might fail. If an update fails, stop sending data and try to update the firmware again.

Device Configuration

Basic Configuration

- **1]** In ***MADRIX HARDWARE MANAGER***, navigate to the ***Devices*** tab.
- **2]** You will see connected devices in a list including their current main settings.
- **3]** Basic settings can be changed and configured, including ***Name***, ***IP Address***, ***Subnet Mask***, ***Gateway***, and more.

Open Web Configuration

- **1]** In ***MADRIX HARDWARE MANAGER***, navigate to the ***Devices*** tab and select a device/devices in the list.
- **2]** ***Right Mouse Click > Open Device Configuration Via HTTP...*** opens your standard web browser and the built-in web configuration of the selected device.
- Learn more »**Web Configuration [Ethernet]**

Restore Factory Default Settings

- **1]** In ***MADRIX HARDWARE MANAGER***, navigate to the ***Devices*** tab and select a device/devices in the list.
- **2]** ***Right Mouse Click > Restore Factory Default Settings*** restores the original settings of the device. [Since this may change back the IP address to the original setting, the website will automatically be reloaded after a few seconds and you will automatically be redirected to the correct website and IP address.]

Firmware Updates

- **1]** In ***MADRIX HARDWARE MANAGER***, navigate to the ***Firmware Files*** tab and make sure you have the right [the latest] firmware version already downloaded and available. An active internet connection is required.
- **2]** Go to the tab ***Devices*** and select a device/devices in the list.

- **3]** Navigate to the column ***Firmware*** and select the firmware you wish to install on the devices.

More Information

Please see the ***MADRIX HARDWARE MANAGER User Manual*** for more information.

See »**help.madrix.com**

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//PART 3

MADRIX 5 Software

3 MADRIX 5 Software

This topic includes:

- Overview
- Operating Modes
- Notes

Overview

The MADRIX ORION works great in combination with the MADRIX 5 Software.

Operating Modes

You can mainly use 3 operating modes together with MADRIX 5 :

- DMX-IN Via Ethernet Netwerk [Art-Net Remote]
- DMX-IN Via Ethernet Network [Streaming ACN / sACN]
- DMX-IN Via USB

Notes

- MADRIX ORION receives analog input data via its two ports and processes and sends the data out via USB or Ethernet network [incl. Art-Net and Streaming ACN].
- MADRIX ORION uses a maximum of 16 DMX channels.
  - Up to 8 DMX channels are used when letting the device send only 8-bit data.
  - Up to 16 DMX channels are used when letting the device send only 16-bit data.

3.1 Input [Art-Net]

This topic includes:

- DMX-IN Via Ethernet Network [Art-Net]
- 1] Initial Configuration
- 2] Windows Network Settings
- 3] Activating Art-Net
- 4] Adding Devices Automatically
- 5] Configuration Of Art-Net Input
- 6] Activating Your Art-Net Input Device
- 7] Activating DMX Input
- 8] Art-Net Remote

DMX-IN Via Ethernet Network [Art-Net]

You can connect MADRIX ORION via Ethernet network directly or indirectly to the network card of your computer that runs the MADRIX 5 Software. Data is sent to the ORION via a port and from the ORION to MADRIX 5 via Ethernet network.

1] Initial Configuration

- Connect your external equipment [such as, compatible sensors, potentiometers, switches, and triggers] to the required port of MADRIX ORION.
- Connect MADRIX ORION to power.
  [Please see safety instructions in the MADRIX ORION Technical Manual & Quick Start Guide!]
- Connect MADRIX ORION directly or indirectly to your computer via network cabling.
- It is highly recommended to only use Gigabit Ethernet network components [network card, switches, etc.].
- Make sure that you have configured MADRIX ORION correctly via the »Configuration Using A Web Browser

2] Windows Network Settings

Art-Net is a network-based protocol. MADRIX 5 will use the network card of your computer to receive data.

- **It is required to set up the correct network settings in Windows, first.**
- **You must use these IP address and Subnet mask settings. Otherwise, Art-Net might not work!**
- **The IP addresses of your computer and of your MADRIX ORION devices need to be different and each needs to be unique.**

- Set up an individual ***IP address*** in the following IP address range:
  - ***2.0.0.1*** … ***2.255.255.254*** or
  - ***10.0.0.1*** … ***10.255.255.254***
- Set up the corresponding ***Subnet mask***
  - 255.0.0.0

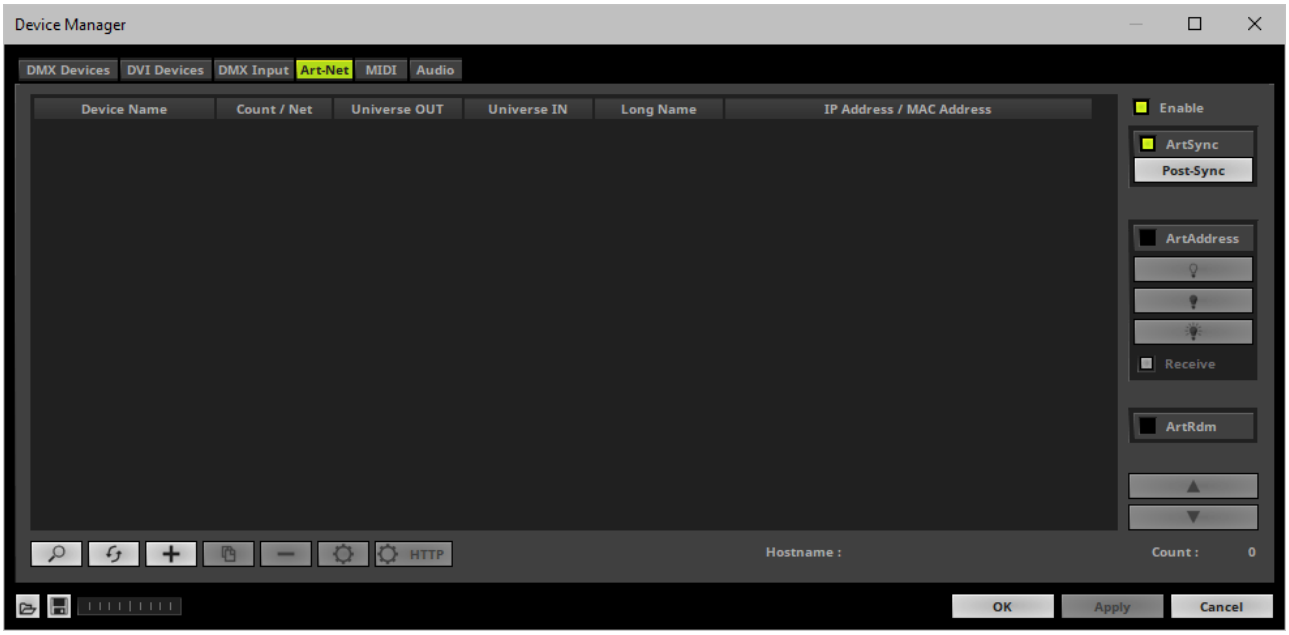
  [Via factory default settings, MADRIX ORION devices will have an IP address in the 10.x.x.x network range, such as 10.80.0.100, for example].
  [Please note: Your devices and the sender, such as the PC that runs MADRIX 5, need to have the same subnet mask!]

- **Restart MADRIX 5 , if you have changed the network settings in Windows while MADRIX 5 was running.**
- Learn more »Tips [Microsoft Windows / Networks / USB]

3] Activating Art-Net

- Go to the menu ***Preferences > Device Manager... > Art-Net***
  [Keyboard shortcut: ***F4 > Art-Net***]

- Activate ***Enable***

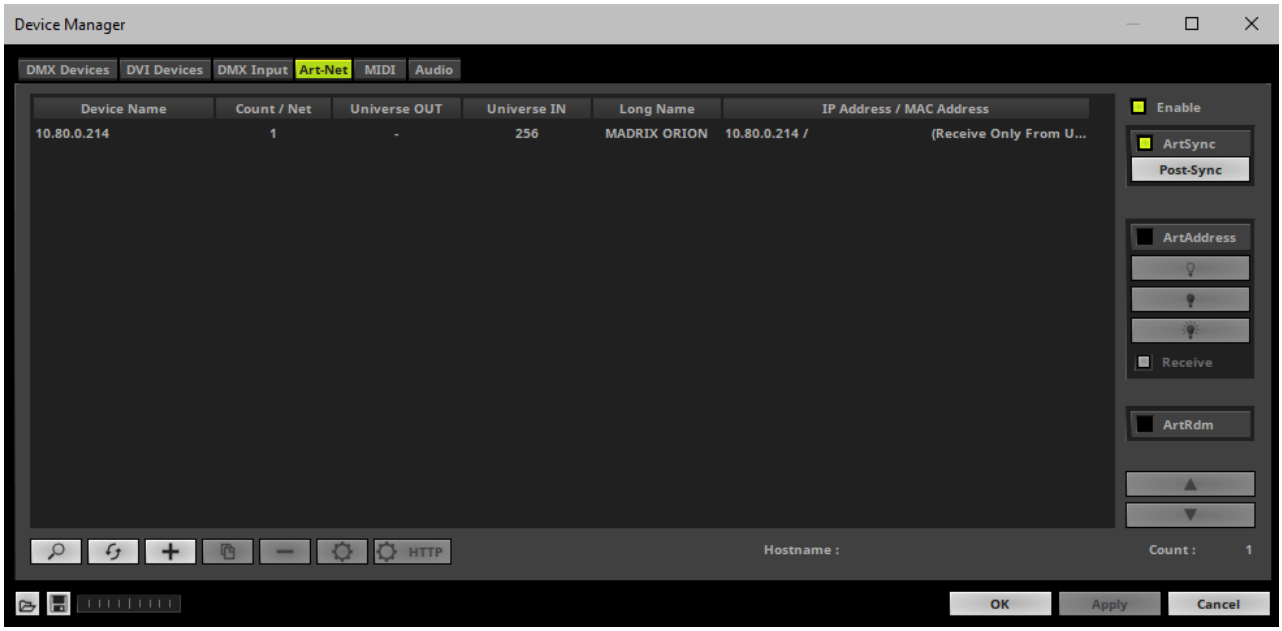


4] Adding Devices Automatically

MADRIX 5 can automatically add your MADRIX ORION devices.

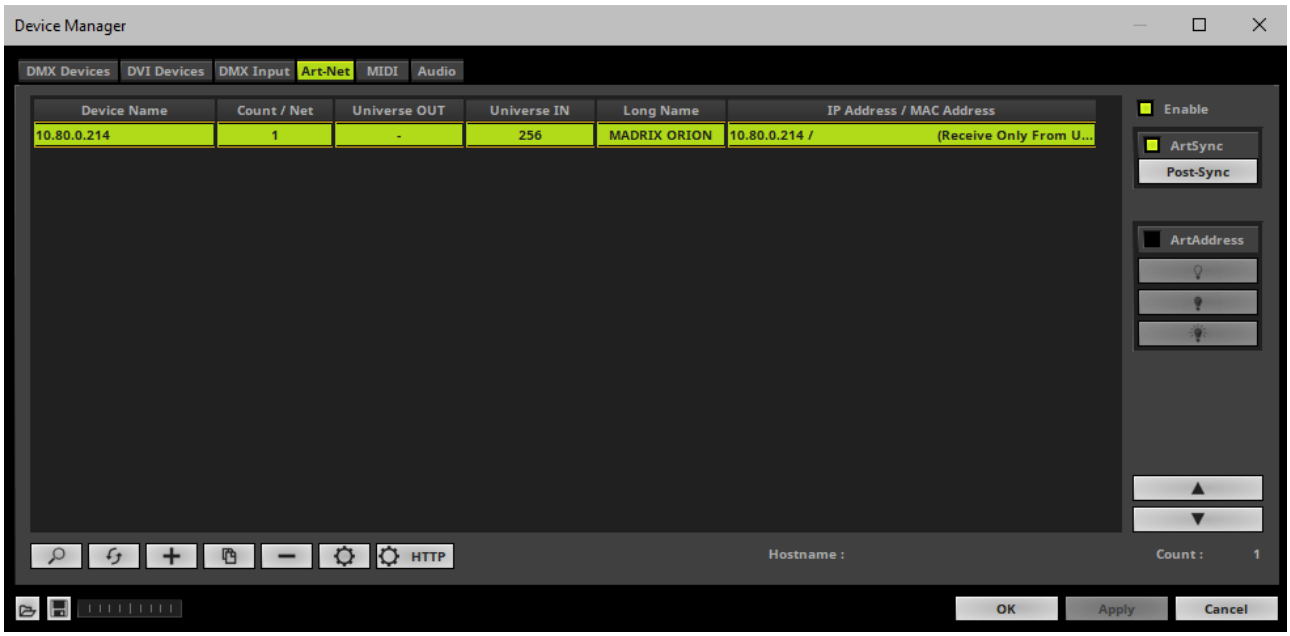
- Click 

  [MADRIX 5 will automatically search the network for connected MADRIX ORION devices. Devices that are found will appear in the list. One entry will be created in the list for each ORION device.]

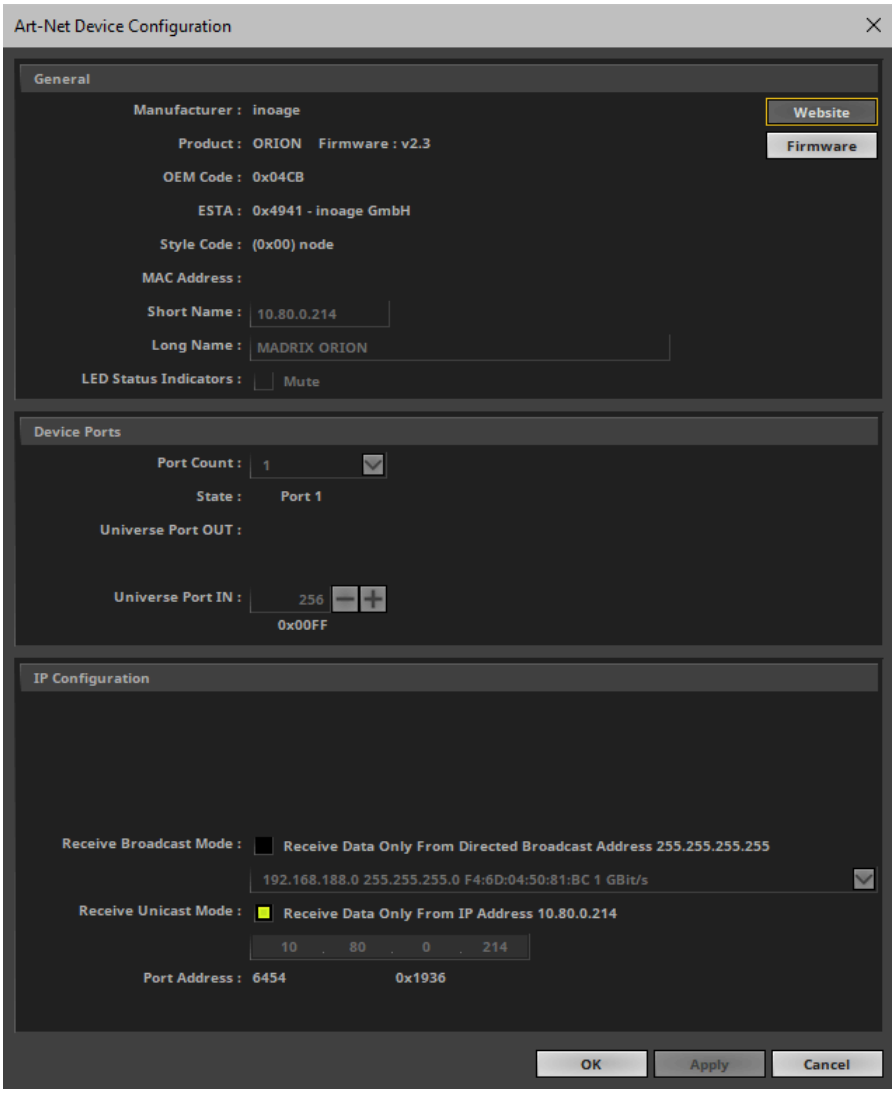


5] Configuration Of Art-Net Input

- Select your ORION device in the list.



- Click 
- A new window opens [***Art-Net Device Configuration***].



- ***Universe Port IN***

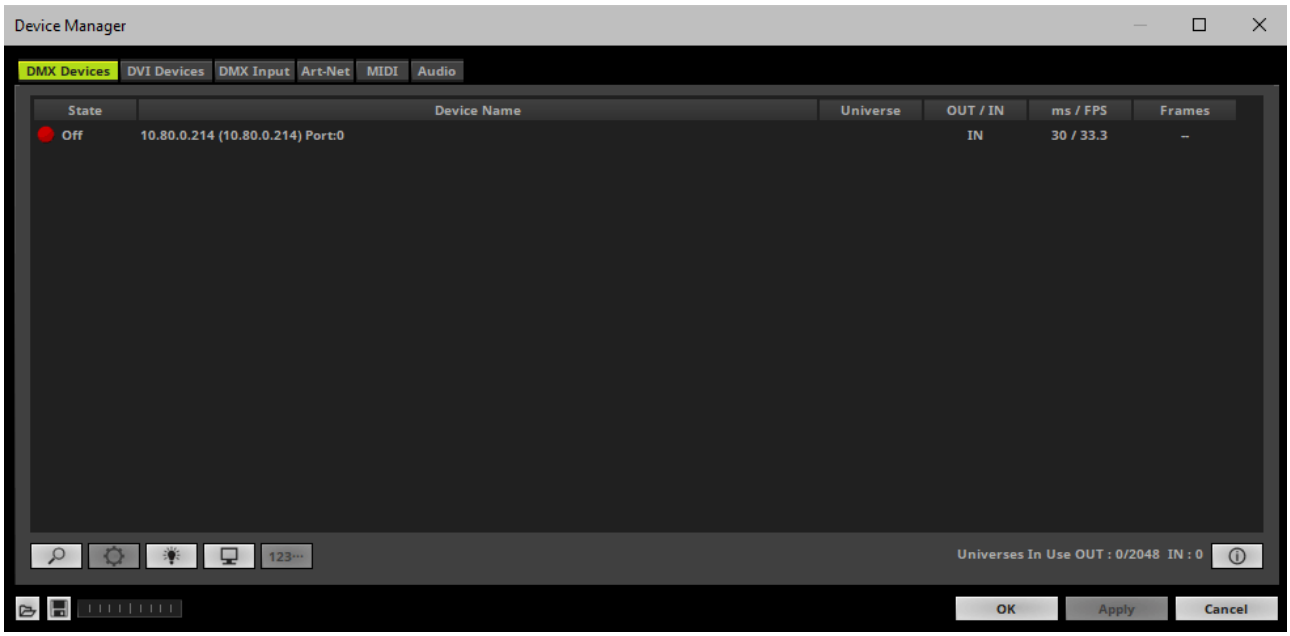
  - By default, MADRIX ORION sends input data to network universe 256. You can change these settings in the Web Configuration or MADRIX Device Configuration window if required.

- Activate ***Receive Direct IP Mode*** and enter the ***IP Address*** of your MADRIX ORION. Confirm with ***Apply*** [E.g., 10.80.0.223]
- [You can also activate ***Receive Broadcast Mode***. In this mode, MADRIX 5 will receive any DMX data that is sent in the network on this particular Art-Net universe.]
- Click ***OK***

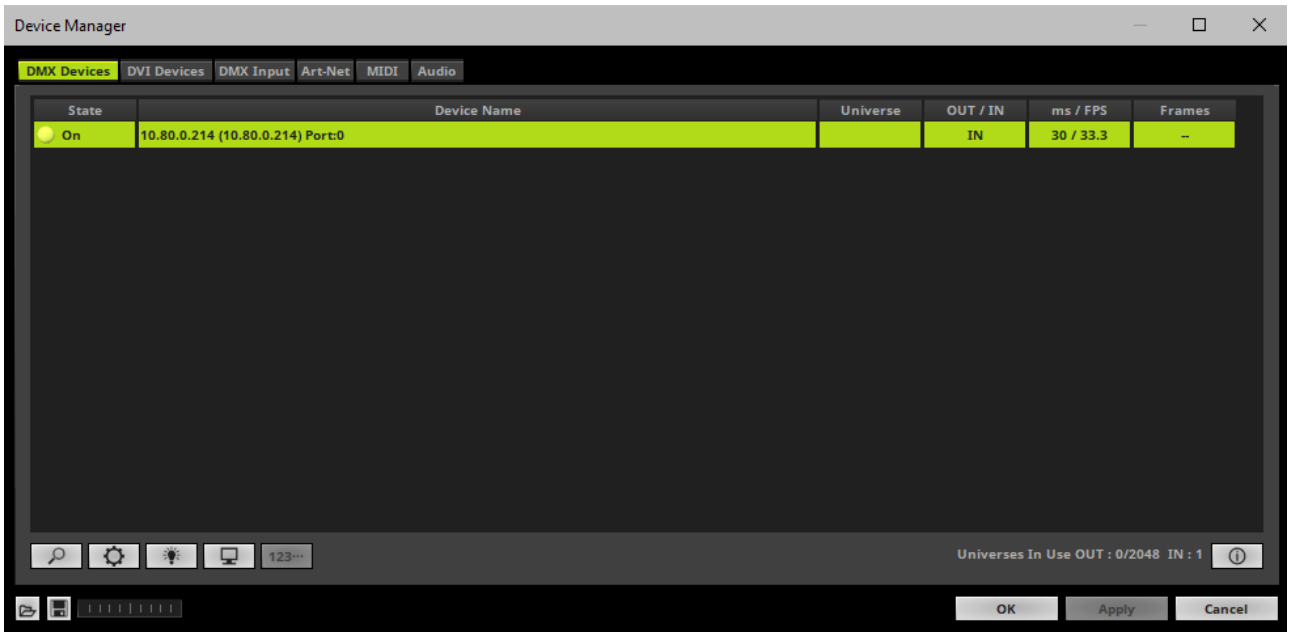
6] Activating Your Art-Net Input Device

You need to activate the Art-Net input device. It is still deactivated.

- Go to the menu ***Preferences > Device Manager... > DMX Devices***
  [Keyboard shortcut: ***F4***]



- Select the ORION device in the list.
- ***Right Mouse Click*** on the column ***State*** to set from ***Off*** to ***On*** [indicated by green light].
- ***IN*** is automatically activated.



- If required, change the frame time.

  - ***Right Mouse Click*** or ***Left Mouse Double-Click*** on the column ***ms / FPS*** and enter the required number.

  - The frame time [in milliseconds; ms] affects the frame rate. The frame rate specifies how fast data is sent to the device or received from it [in Frames Per Second; FPS].

  - Increase the frame time in order to decrease the frame rate [e.g., 40 ms = 25 FPS].

  - Decrease the frame time in order to increase the frame rate [e.g., 20 ms = 50 FPS].

  - The default value is 30 ms / 33.3 FPS.

  - The minimum value is 1000 ms / 1 FPS.

  - The maximum value is 5 ms / 200 FPS.

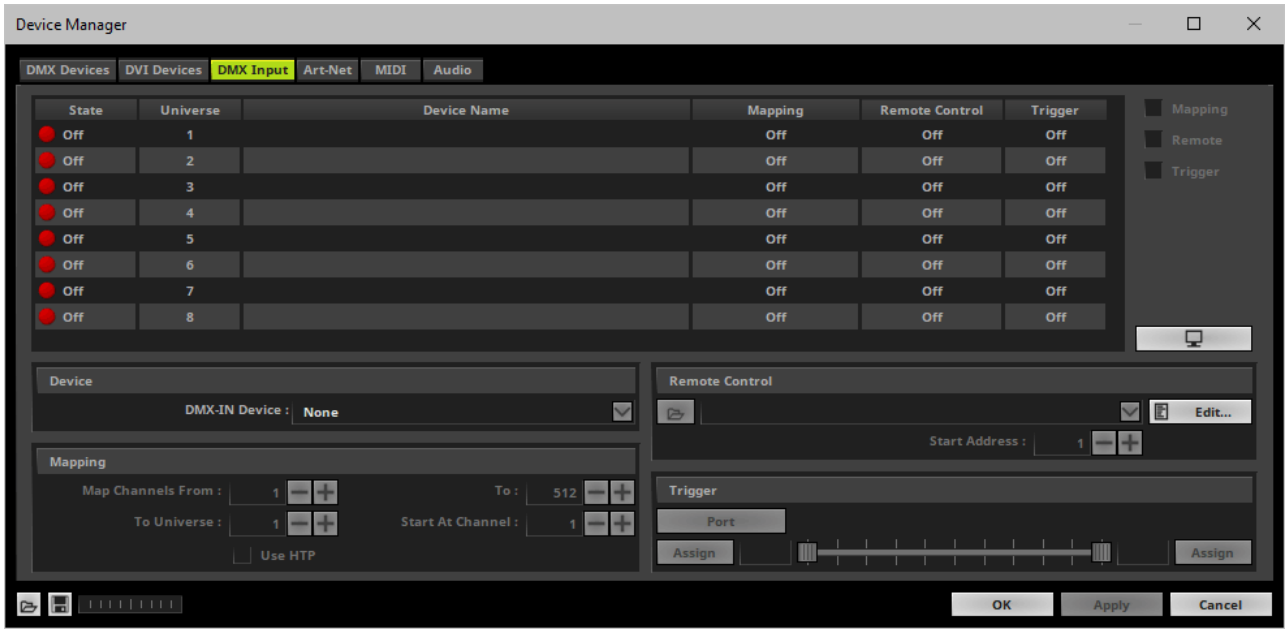
  Please note: If you want to output high frame rates, make sure to set Main Mixing FPS in the Options to the same value in order to render the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated].

  Please note: If you want to input high frame rates, make sure to set DMX Controller Input FPS in the Options to the same value in order to process the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated].

  - **Some LED fixtures might have problems with a low frame time / high frame rate. Then, it is recommended to increase the frame time / decrease the frame rate.**

7] Activating DMX Input

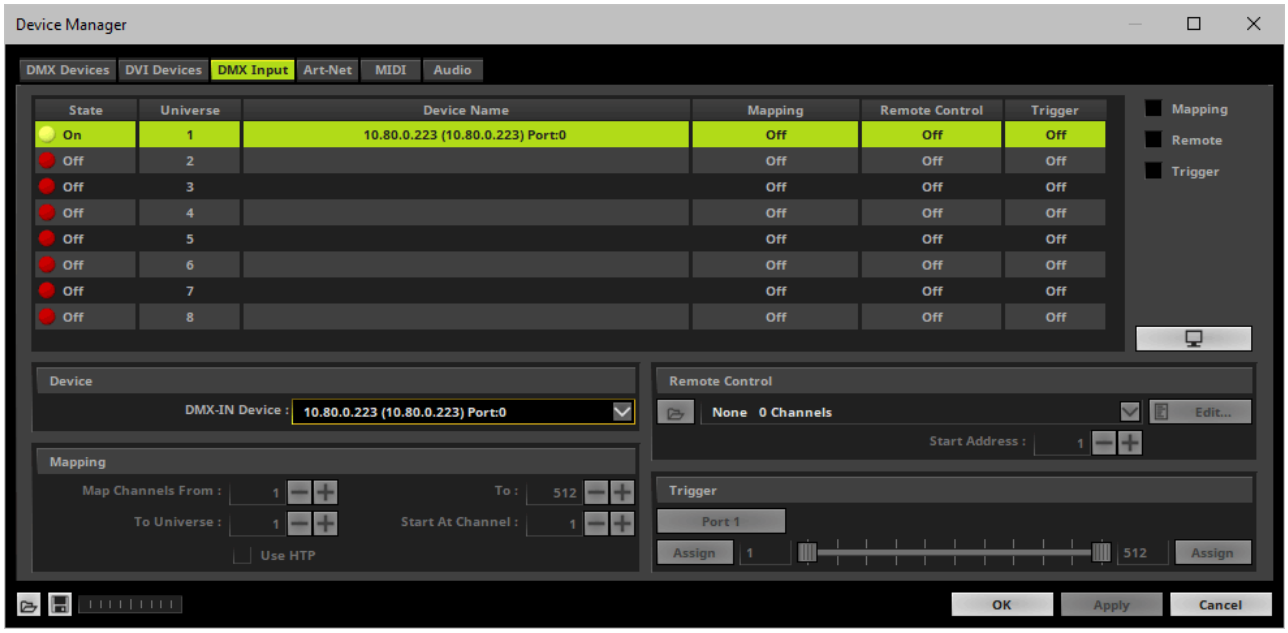
- Go to the menu ***Preferences > Device Manager... > DMX Input***



- Select your preferred DMX ***Universe*** in the list.

  [By default, DMX universe 1 to 8 are listed. If you wish to increase the number of DMX-IN universes, you can change the setting under menu ***Preferences > Options... > Performance***]

- Choose your ***DMX-IN Device*** in the section ***Device***. Select the Art-Net input device via its IP address.



- Art-Net input is now activated. MADRIX 5 can already receive DMX data.
- Now, choose how to use incoming data as explained below.

8] Art-Net Remote

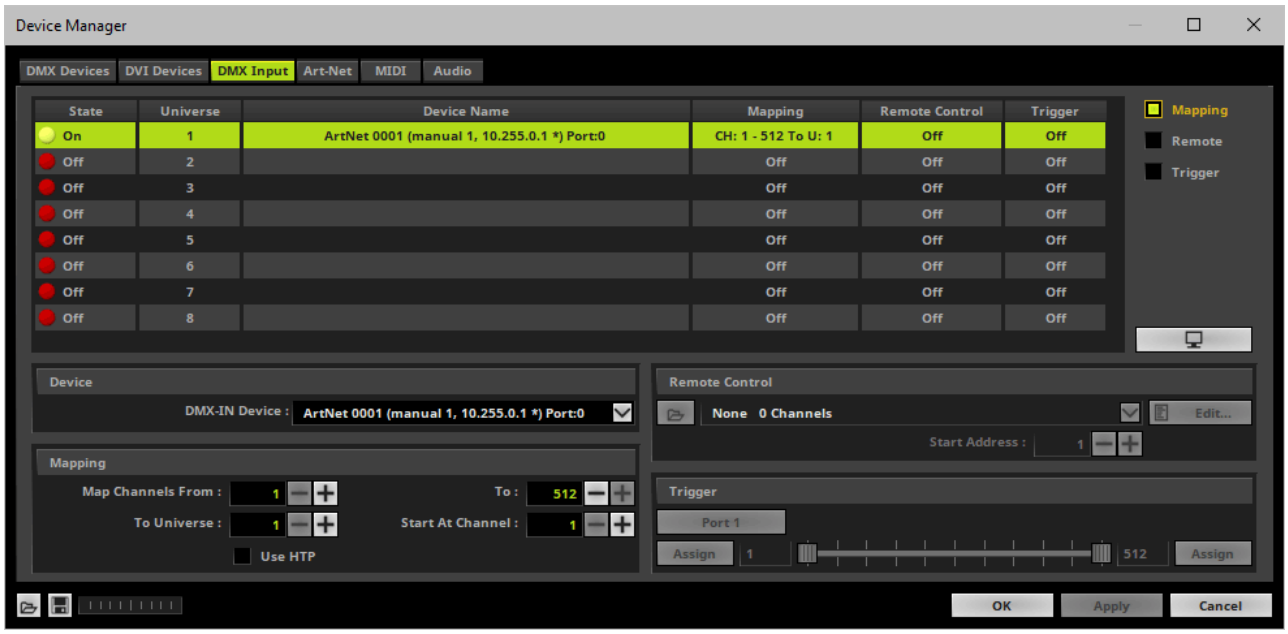
Data

- At this point, MADRIX 5 is now already receiving any incoming data.
- You can now use this data, for example for Scripts and Macros.
- If you want to monitor incoming signals, select your DMX universe/DMX device in the list and click 

Mapping

- Use Mapping, if you want to route incoming DMX signals through MADRIX 5 to your output [DMX-Thru].
- First, select your device in the list.

- Activate ***Mapping***
- This feature maps incoming data to the specified DMX universe and channels.



- Configure the following settings in the section ***Mapping***

  - Map Channels From - Defines which incoming channels are used. This is the start channel to specify the range of channels.

  - To - Defines which incoming channels are used. This is the end channel to specify the range of channels.

  - To Universe - Defines onto which output DMX universe MADRIX 5 should map the specified range of incoming channels.

  - Start At Channel - Defines the first DMX channel of the output DMX universe MADRIX 5 should use.

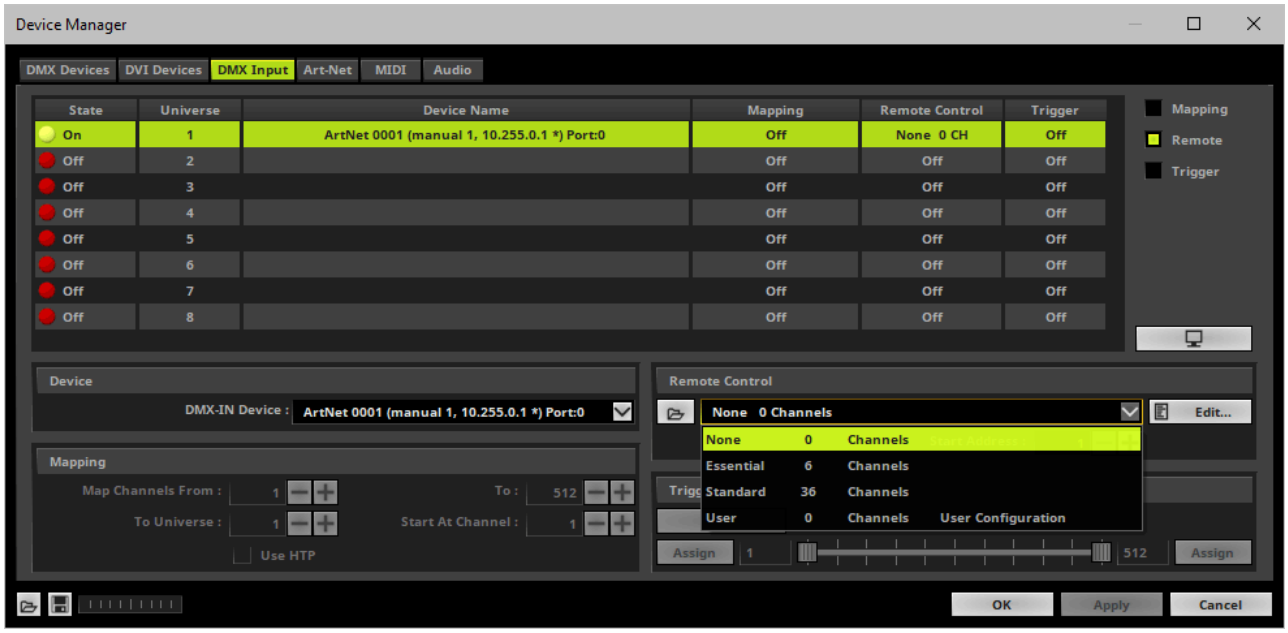
  - Use HTP - Activates the Highest Takes Precedence feature. You can map incoming data to a DMX address range that MADRIX 5 already controls. Use HTP and MADRIX 5 will compare incoming values with the DMX data it sends to the DMX output. As a result, MADRIX 5 will only use the highest of both values on a particular channel and send it to the output.

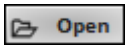
- Click ***Apply*** to confirm.

Remote Control

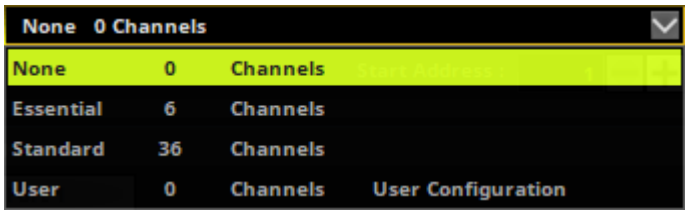
- Use Remote Control, if you want to control the MADRIX 5 Software remotely
- First, select your device in the list.

- Activate ***Remote***
- Select one of the built-in protocols in the section ***Remote Control*** as explained below or create your own remote configuration.

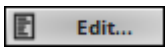




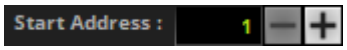
Open **-** Loads a previously saved MADRIX 5 DMX Remote Configuration file [of the file type *.mdrx].



Protocols - Choose from a pre-configured protocol [configuration].



DMX-IN Remote Editor **-** Allows you to modify a configuration or create a new configuration.



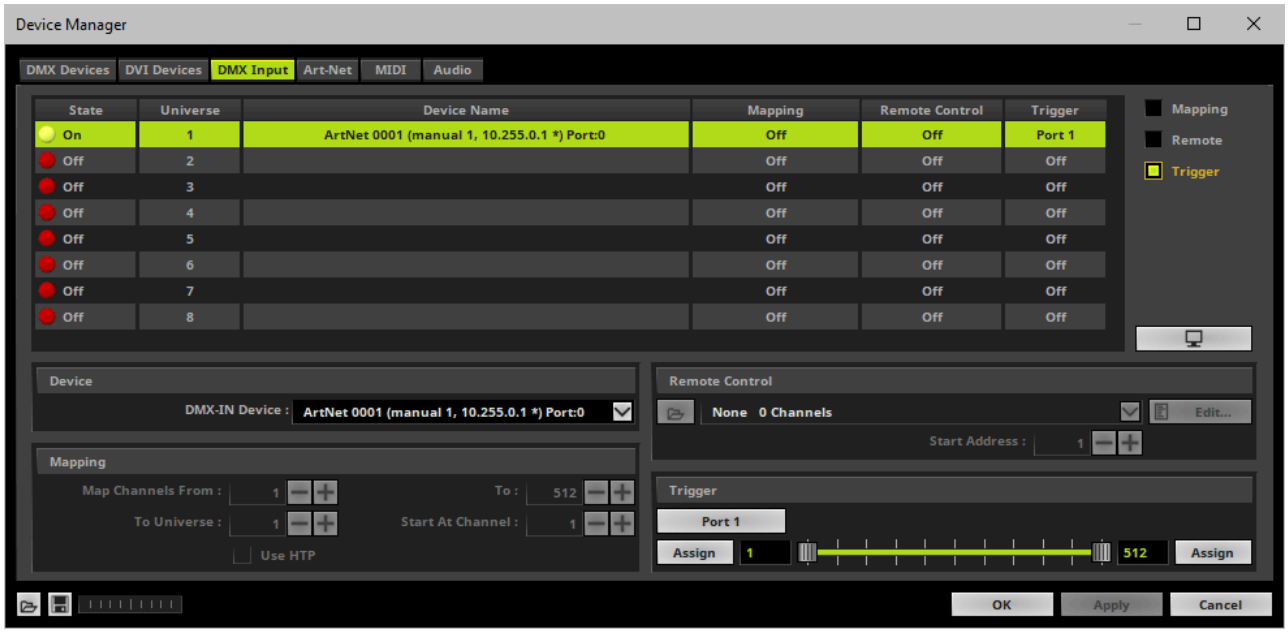
Start Address **-** Defines on which particular DMX channel the protocol should start. The whole protocol will be mapped to this new address area.

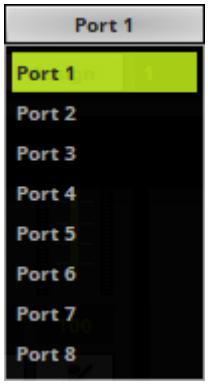


DMX Watcher - Opens the DMX Watcher to monitor your DMX output or input.

Trigger

- Use Trigger, if you want to use incoming signals for the MADRIX 5 TRI Effects.
- First, select your device in the list.
- Activate ***Trigger***



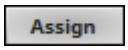


Port - Defines the port [Port 1 - 8] that is assigned to this DMX-IN Device. MADRIX 5 allows you to send trigger signals from up to 8 different devices [8 ports] and assign a MADRIX 5 TRI Effect the corresponding port.



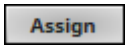
Value Range - Defines the range of incoming DMX values that can be used as trigger signal.

- The minimum and default value is 1.
- The maximum and default value is 512.



Assign Minimum Value - Automatically assigns the minimum value when using the controller.

- Click ***Assign*** and use the control on your controller for the minimum value and the value will be set automatically in the MADRIX 5 Software.



Assign Maximum Value - Automatically assigns the maximum value when using the controller.

- Click ***Assign*** and use the control on your controller for the maximum value and the value will be set automatically in the MADRIX 5 Software.

3.2 Input [sACN]

This topic includes:

- DMX-IN Via Ethernet Network [Streaming ACN / sACN]
- 1] Initial Configuration
- 2] Windows Network Settings
- 3] Activating Streaming ACN
- 4] Enabling Input
- 5] Configure Your Device
- 6] Enable DMX-IN
- 7] sACN Input

DMX-IN Via Ethernet Network [Streaming ACN / sACN]

You can connect MADRIX ORION via Ethernet network directly or indirectly to the network card of your computer that runs the MADRIX 5 Software. Data is sent to the ORION via a port and from the ORION to MADRIX 5 via Ethernet network.

1] Initial Configuration

- Connect your external equipment [such as, compatible sensors, potentiometers, switches, and triggers] to the required port of MADRIX ORION.
- Connect MADRIX ORION to power.
  [Please see safety instructions in the MADRIX ORION Technical Manual & Quick Start Guide!]
- Connect MADRIX ORION directly or indirectly to your computer via network cabling.
- It is highly recommended to only use Gigabit Ethernet network components [network card, switches, etc.].
- Make sure that you have configured MADRIX ORION correctly via the »Configuration Using A Web Browser

2] Windows Network Settings

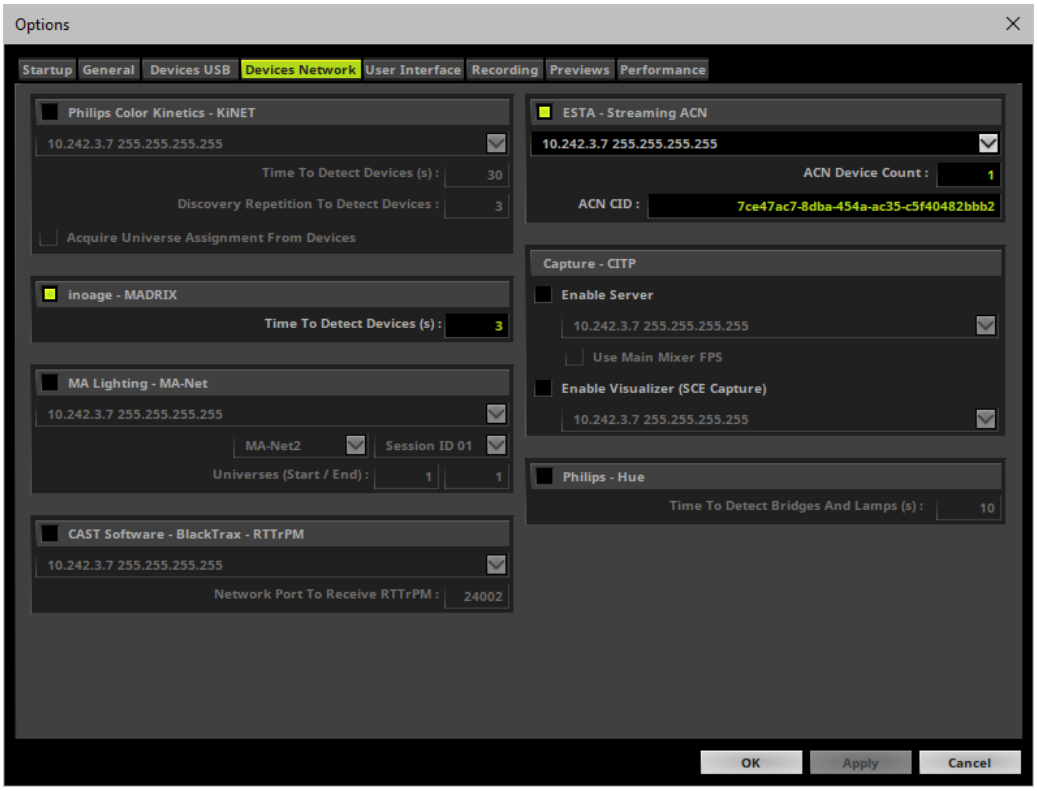
- MADRIX 5 automatically sets up Streaming ACN network settings for you.
- You only need a computer with a network card and a valid IP address.

- **You do not have to change the IP address settings in Windows for Streaming ACN!**
- **The IP address range for sACN devices is 239.255.X.X according to the Streaming ACN specifications.**
  [Even if your sACN devices are set to a different IP address range, you may try the connection from MADRIX 5 to your devices.]
- **Make sure that your Firewall does not block data of the 239.255.X.X IP address range!**
- **Check the settings of the Windows Firewall.**

- Learn more »Tips [Microsoft Windows / Networks / USB]

3] Activating Streaming ACN

- Go to the menu ***Preferences > Options... > Devices Network***
  [Keyboard shortcut: ***Ctrl+Alt+O > Devices Network***]
- Activate ***ESTA - Streaming ACN***
- **Choose your network card** from the drop-down list. Make sure to select the correct network adapter that will be used for Streaming ACN!
  [The IP address and Subnet mask label should help you select the correct adapter. It is not necessary to change any of these networks settings.]
- ***ACN Device Count*** - Set up how many you are going to use.
  [This is the total amount of OUT and IN devices. Please set the exact number of devices you are using. If the count is higher, this creates unnecessary network traffic.]
- Click ***Apply***



- ***ACN CID -*** Being a network protocol, Streaming ACN sends a so-called CIDs [Component Identifier].
  - Every single ACN device has such a unique ID.
  - When using Streaming ACN, your MADRIX 5 Software is one of those devices.
  - When you start MADRIX 5 for the first time, this ID will be generated automatically for you. From this point onwards it will be used on your PC.
  - With this ID your MADRIX 5 Software can be easily identified in the network. Interfaces can detect this unique ID and can be configured to receive data from this particular device. Please note that the ACN interface must support this feature.
  - **Do not change the ACN CID, unless you are an experienced user!**
- Click ***OK*** to close the window.

4] Enabling Input

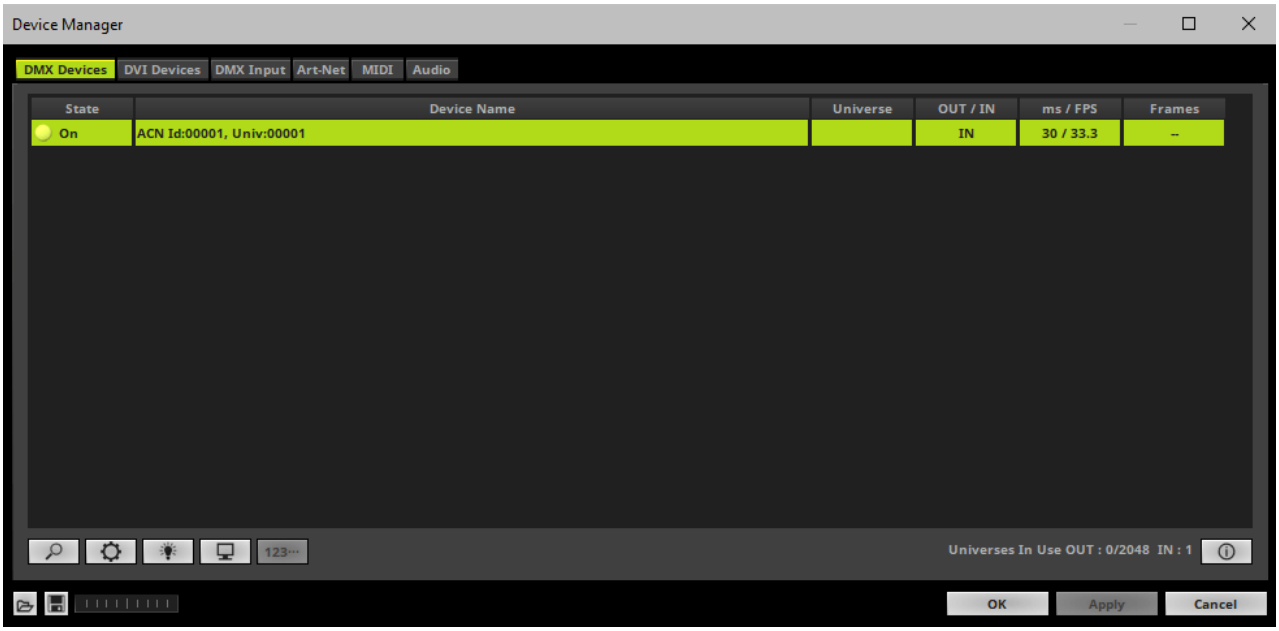
- Go to ***Preferences > Device Manager... > DMX Devices***
  [Keyboard shortcut: ***F4***]
- MADRIX 5 automatically creates and adds the number of interfaces to the list.
  [according to ***ACN Device Count***]
- Select your device.
- ***Right Mouse Click*** on the column ***OUT / IN*** to set to ***IN*** for data input if you wish to receive incoming data through this device.
- In DMX-IN mode, you will not be able to select the ACN protocol. MADRIX 5 will automatically select the correct protocol version.
- Set up the frame time for your device.
  - ***Right Mouse Click*** or ***Left Mouse Double-Click*** on the column ***ms / FPS*** and enter the required number.
  - The frame time [in milliseconds; ms] affects the frame rate. The frame rate specifies how fast data is sent to the device or received from it [in Frames Per Second; FPS].
  - Increase the frame time in order to decrease the frame rate [e.g., 40 ms = 25 FPS].
  - Decrease the frame time in order to increase the frame rate [e.g., 20 ms = 50 FPS].
  - The default value is 30 ms / 33.3 FPS.
  - The minimum value is 1000 ms / 1 FPS.

- The maximum value is 5 ms / 200 FPS.

Please note: If you want to output high frame rates, make sure to set Main Mixing FPS in the Options to the same value in order to render the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated].

Please note: If you want to input high frame rates, make sure to set DMX Controller Input FPS in the Options to the same value in order to process the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated].

- **Some LED fixtures might have problems with a low frame time / high frame rate. Then, it is recommended to increase the frame time / decrease the frame rate.**

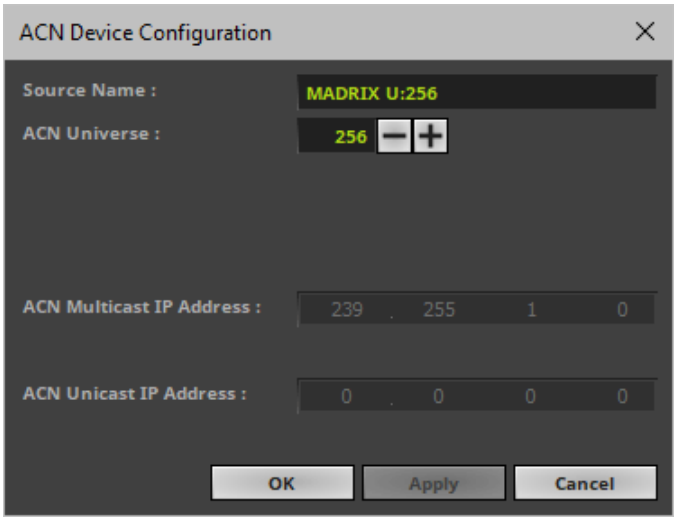


- **Note: If you are loading a MADRIX 5 Setup, please check if the number of ACN devices in your setup corresponds with the number that is activated. The Setup stores the number of devices. But if you changed the amount and then loaded the Setup, the newly defined number will be activated.**

5] Configure Your Device

- Make sure that your device is still selected under ***Preferences > Device Manager... > DMX Devices***
- Click 

- A new window will open.



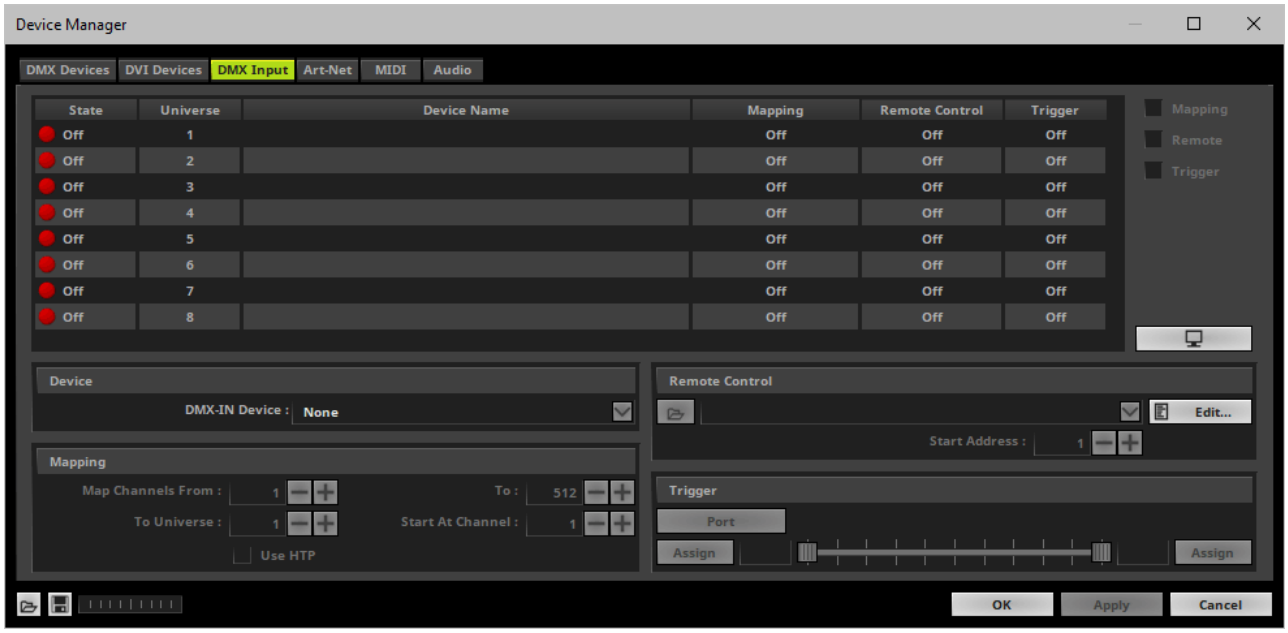
Set up the following settings for your devices:

- ***Source Name -*** Allows you to set up a specific name for the device. This name is send via network as well. Therefore, interfaces may be able to retrieve this name and can be configured to receive data from this source.
  - If you are using the default name ***MADRIX U:X***, the universe will automatically be displayed in the name [represented by X: 1, 2, 3, etc.].
- ***ACN Universe -*** Defines the DMX universe from which data is received.
  - Set up the same universe that is set up in your MADRIX ORION according to the Web Configuration. By default, MADRIX ORION sends input data to network universe 256. You can change these settings in the Web Configuration if required.
  - According to the Streaming ACN specifications, MADRIX 5 will automatically change the ACN IP Address according to the ACN Universe.

- Click ***Apply*** to confirm your changes.
- Click ***OK*** to close the window.

6] Enable DMX-IN

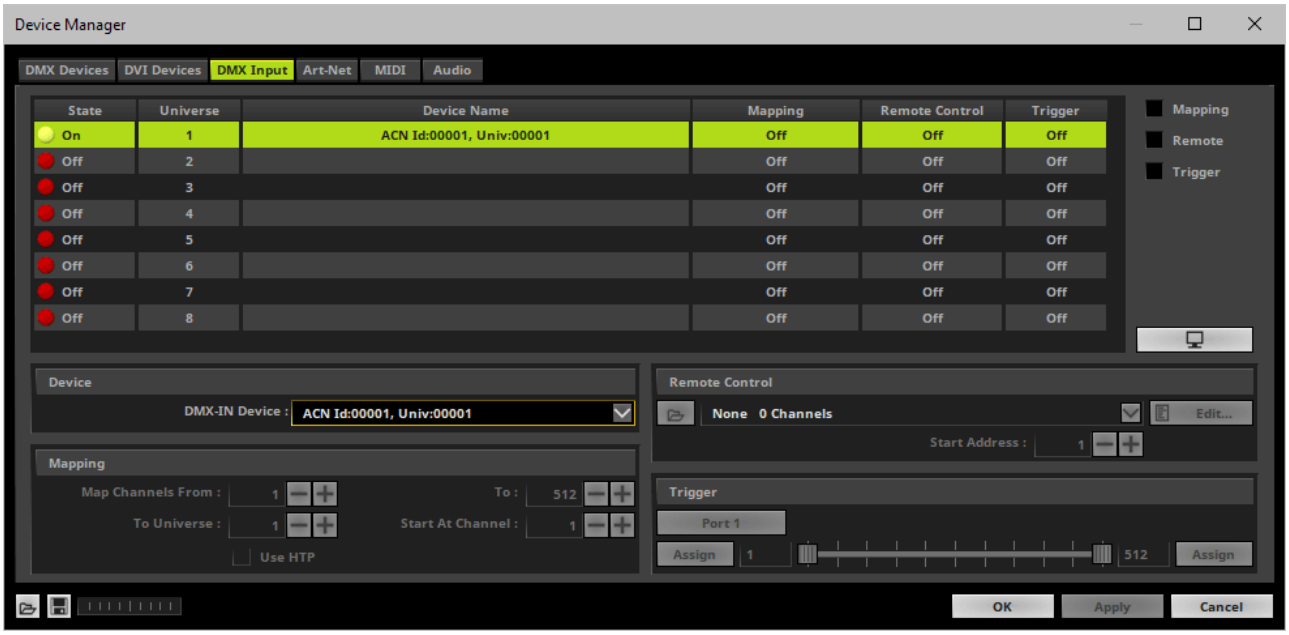
- Go to the menu ***Preferences > Device Manager... > DMX Input***



- Select your preferred DMX ***Universe*** in the list.

  [By default, DMX universe 1 to 8 are listed. If you wish to increase the number of DMX-IN universes, you can change the setting under menu ***Preferences > Options... > Performance***]

- Choose your ***DMX-IN Device*** in the section ***Device***. Select the ***ACN*** input device.



- sACN input is now activated. MADRIX 5 can already receive DMX data.

- Now, choose how to use incoming data as explained below.

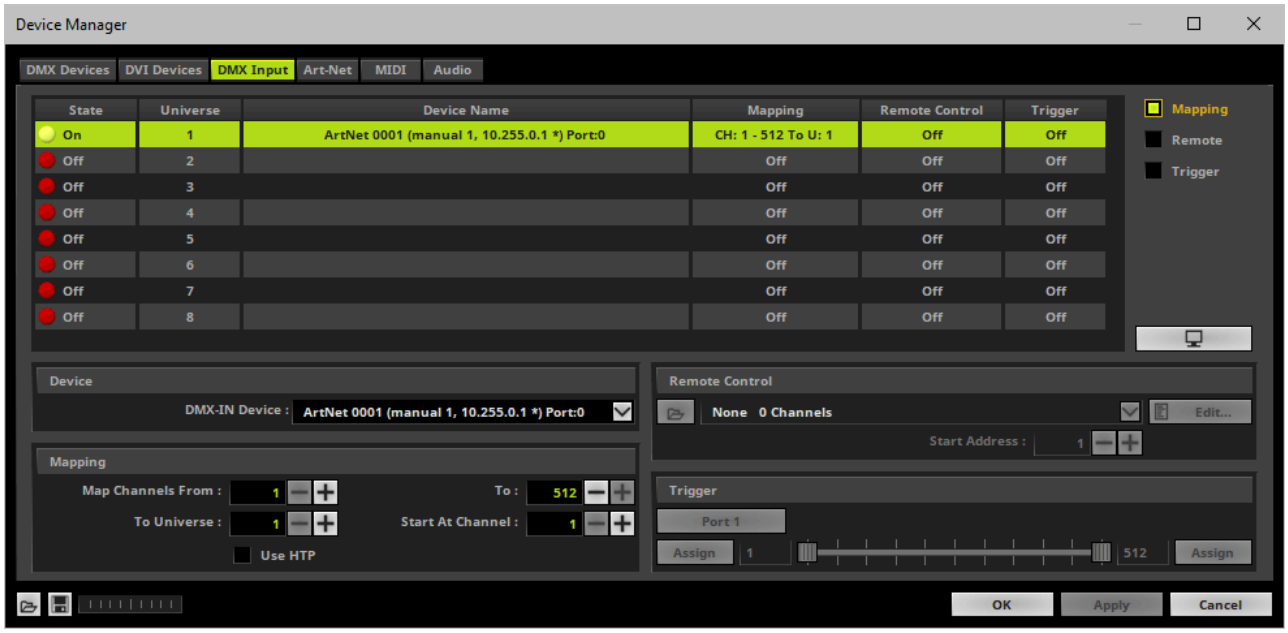
7] sACN Input

Data

- At this point, MADRIX 5 is now already receiving any incoming data.
- You can now use this data, for example for Scripts and Macros.
- If you want to monitor incoming signals, select your DMX universe/DMX device in the list and click 

Mapping

- Use Mapping, if you want to route incoming DMX signals through MADRIX 5 to your output [DMX-Thru].
- First, select your device in the list.
- Activate ***Mapping***
- This feature maps incoming data to the specified DMX universe and channels.



- Configure the following settings in the section ***Mapping***

  - Map Channels From - Defines which incoming channels are used. This is the start channel to specify the range of channels.

  - To - Defines which incoming channels are used. This is the end channel to specify the range of channels.

  - To Universe - Defines onto which output DMX universe MADRIX 5 should map the specified range of incoming channels.

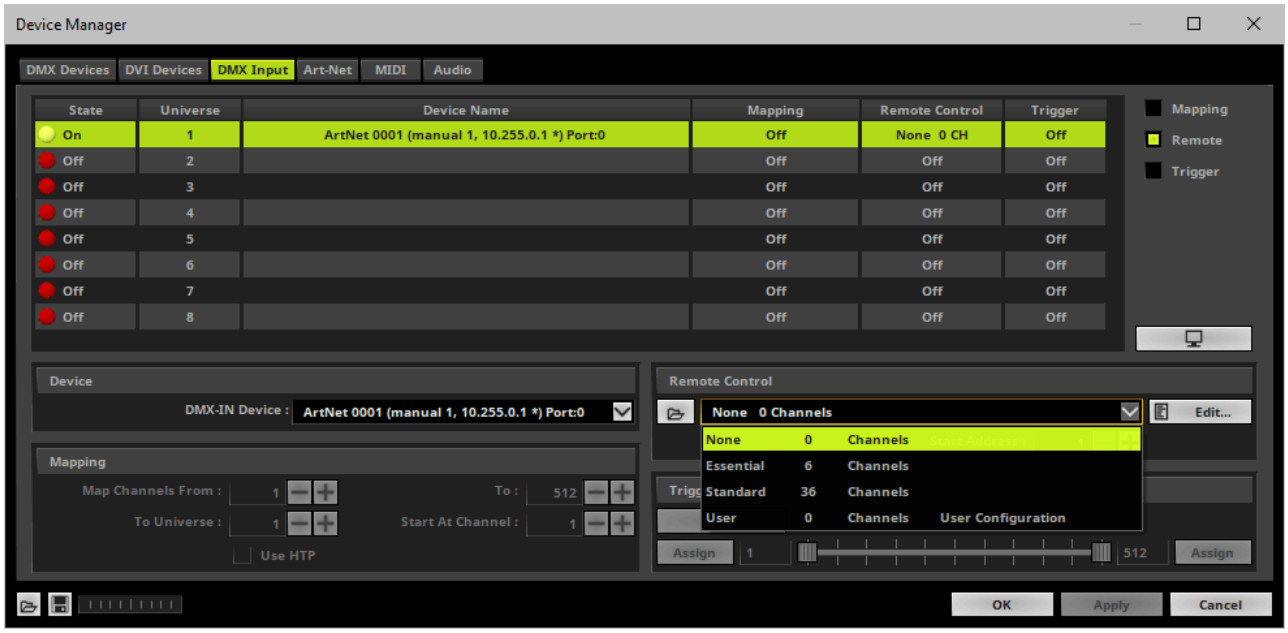
  - Start At Channel - Defines the first DMX channel of the output DMX universe MADRIX 5 should use.

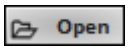
  - Use HTP - Activates the Highest Takes Precedence feature. You can map incoming data to a DMX address range that MADRIX 5 already controls. Use HTP and MADRIX 5 will compare incoming values with the DMX data it sends to the DMX output. As a result, MADRIX 5 will only use the highest of both values on a particular channel and send it to the output.

- Click ***Apply*** to confirm.

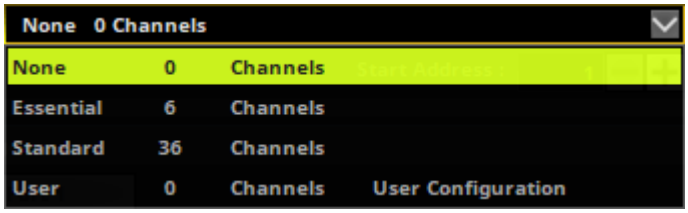
Remote Control

- Use Remote Control, if you want to control the MADRIX 5 Software remotely
- First, select your device in the list.
- Activate ***Remote***
- Select one of the built-in protocols in the section ***Remote Control*** as explained below or create your own remote configuration.

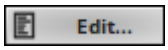

Device Manager
DMX Devices
DVI Devices
DMX Input
Art-Net
MIDI
Audio
State
Universe
Device Name
Mapping
Remote Control
Trigger
On 1 ArtNet 0001 (manual 1, 10.255.0.1 *) Port:0 Off None 0 CH Off
Off 2 Off Off Off
Off 3 Off Off Off
Off 4 Off Off Off
Off 5 Off Off Off
Off 6 Off Off Off
Off 7 Off Off Off
Off 8 Off Off Off
Mapping
Remote
Trigger
Device
DMX-IN Device : ArtNet 0001 (manual 1, 10.255.0.1 *) Port:0
Mapping
Map Channels From : 1
To : 512
To Universe : 1
Start At Channel : 1
Use HTP
Remote Control
None 0 Channels
Edit...
None 0 Channels
Essential 6 Channels
Standard 36 Channels
User 0 Channels User Configuration
Assign 1 512 Assign
OK
Apply
Cancel



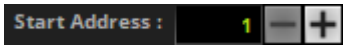
***Open* -** Loads a previously saved MADRIX 5 DMX Remote Configuration file [of the file type *.mdrx].



Protocols - Choose from a pre-configured protocol [configuration].



***DMX-IN Remote Editor* -** Allows you to modify a configuration or create a new configuration.



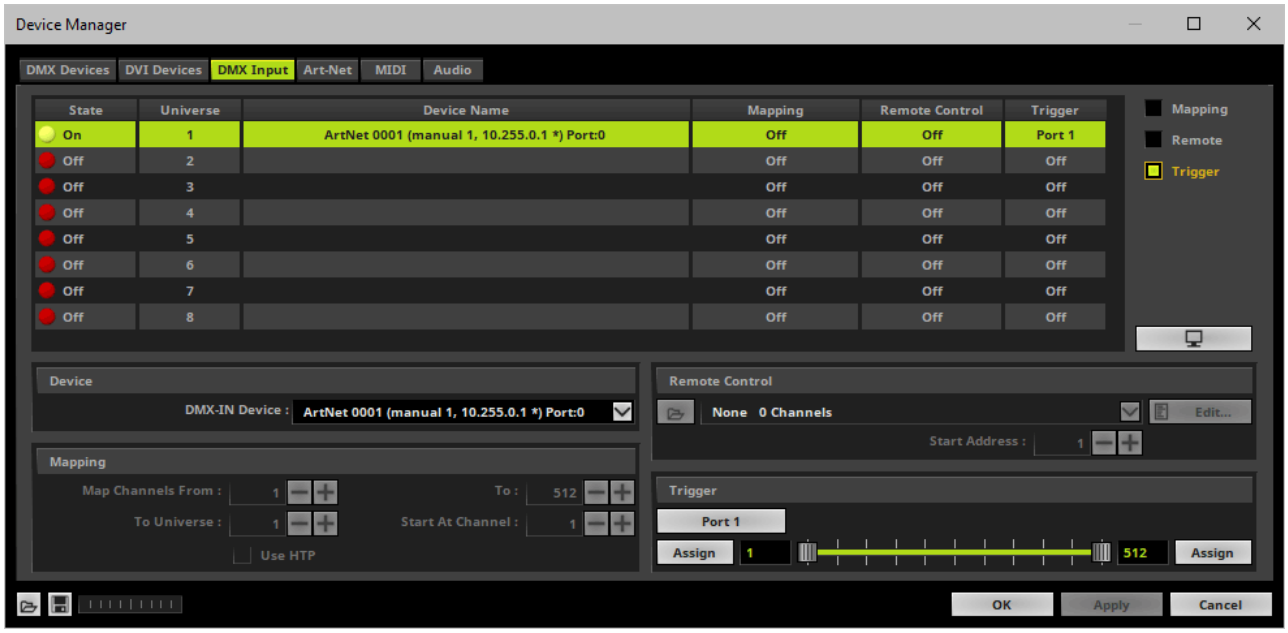
***Start Address* -** Defines on which particular DMX channel the protocol should start. The whole protocol will be mapped to this new address area.

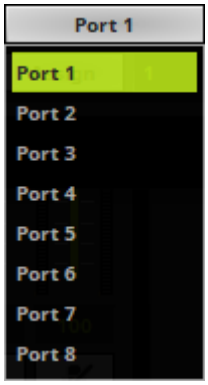


***DMX Watcher* -** Opens the DMX Watcher to monitor your DMX output or input.

Trigger

- Use Trigger, if you want to use incoming signals for the MADRIX 5 TRI Effects.
- First, select your device in the list.
- Activate ***Trigger***



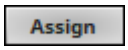


Port - Defines the port [Port 1 - 8] that is assigned to this DMX-IN Device. MADRIX 5 allows you to send trigger signals from up to 8 different devices [8 ports] and assign a MADRIX 5 TRI Effect the corresponding port.



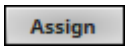
Value Range - Defines the range of incoming DMX values that can be used as trigger signal.

- The minimum and default value is 1.
- The maximum and default value is 512.



Assign Minimum Value - Automatically assigns the minimum value when using the controller.

- Click ***Assign*** and use the control on your controller for the minimum value and the value will be set automatically in the MADRIX 5 Software.



Assign Maximum Value - Automatically assigns the maximum value when using the controller.
- Click ***Assign*** and use the control on your controller for the maximum value and the value will be set automatically in the MADRIX 5 Software.

3.3 Input [USB]

This topic includes:

- DMX-IN Via USB
- 1] Initial Configuration
- 2] Enabling Drivers In MADRIX 5
- 3] Activating Devices
- 4] Activating DMX Input
- 5] DMX-IN

DMX-IN Via USB

You can connect the ORION directly via USB to the computer that runs the MADRIX 5 Software. Data is sent to the ORION via a port and from the ORION to MADRIX 5 over USB.

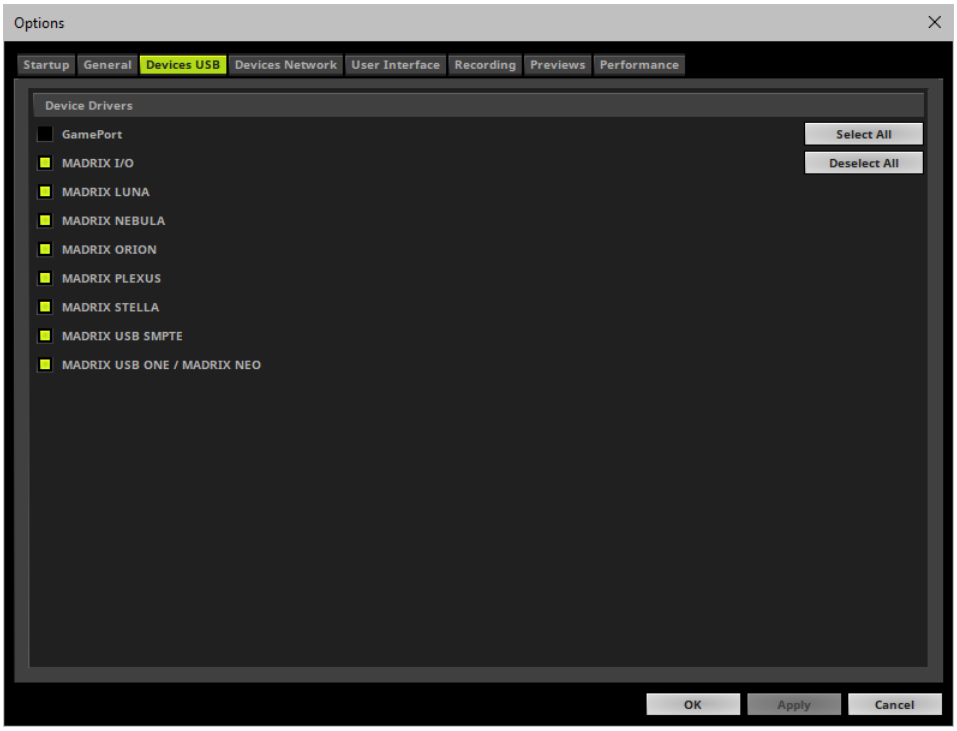
1] Initial Configuration

- Connect your external equipment [such as, compatible sensors, potentiometers, switches, and triggers] to the required port of MADRIX ORION.
- Connect MADRIX ORION to your computer via USB.
  [Use the provided USB cable.]
- Make sure to check the power-management options of Windows. Learn more »PC Power Management

- Make sure that you have configured MADRIX ORION correctly.

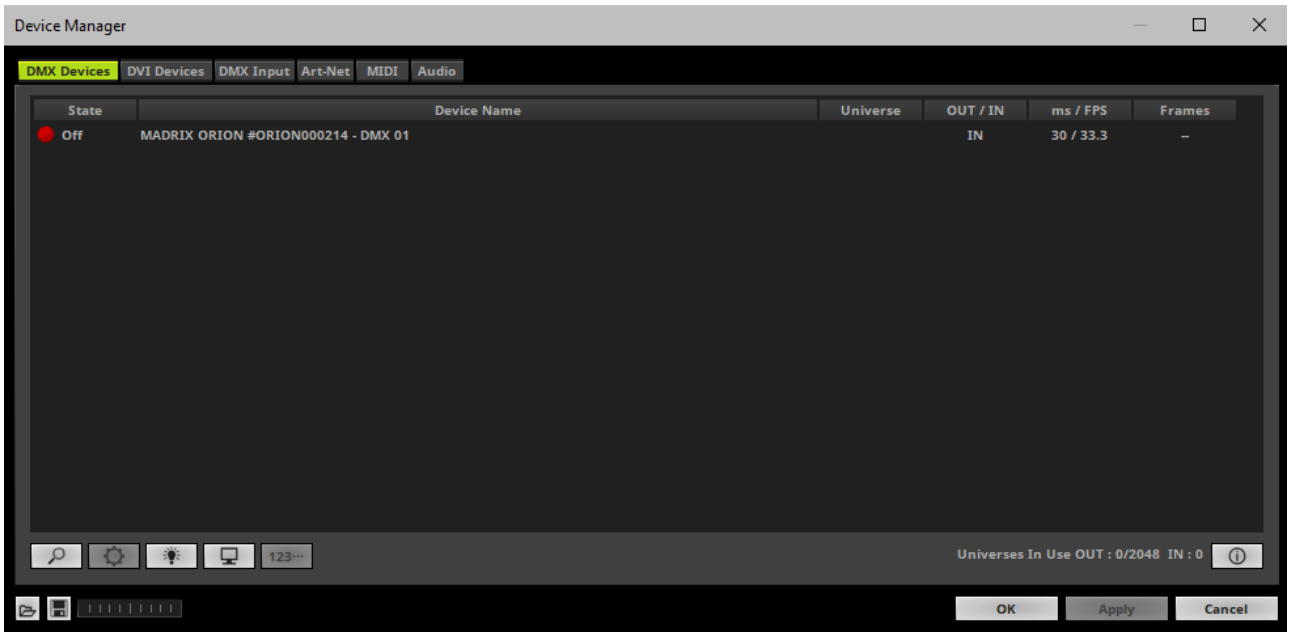
2] Enabling Drivers In MADRIX 5

- Go to the menu ***Preferences > Options... > Devices USB***
  [Keyboard shortcut: ***Ctrl+Alt+O > Devices USB***]
- Activate ***MADRIX ORION***
  [The option is activated by default.]
- Click ***Apply***
- Close the window with ***OK***

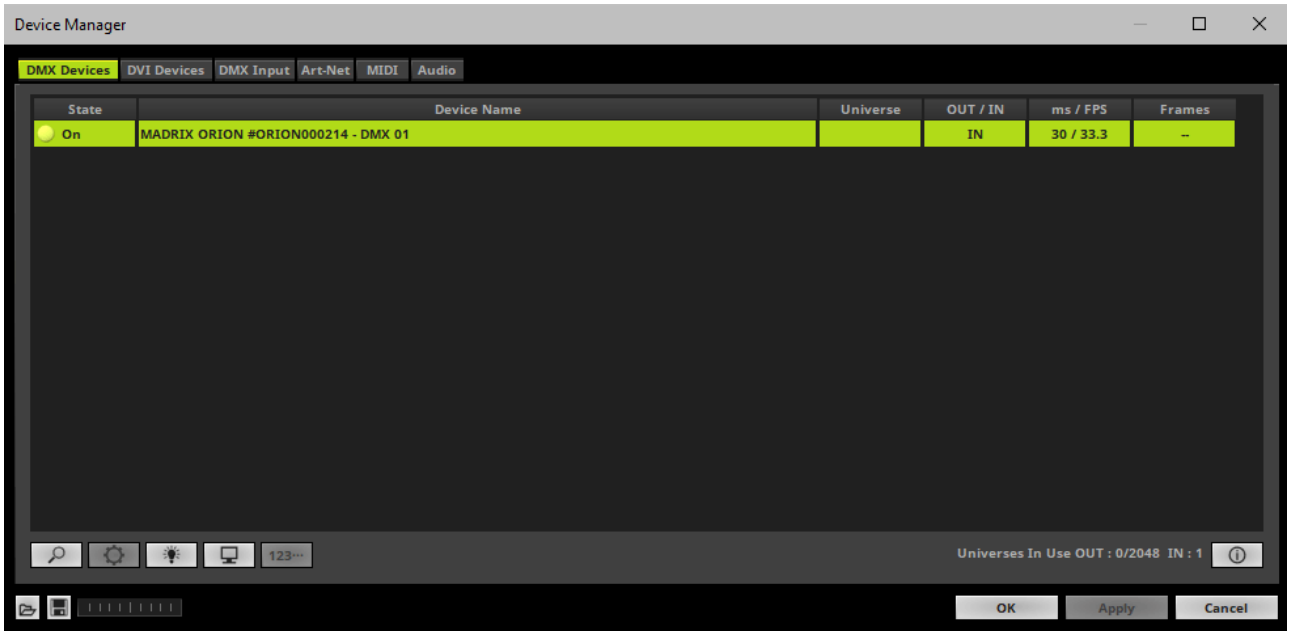


3] Activating Devices

- Go to the menu ***Preferences > Device Manager... > DMX Devices***
  [Keyboard shortcut: ***F4***]
- Your ORION devices will appear in the list.
- If your devices are not in the list, click 
  [In the screenshot below, one ORION is connected.]



- Select the required device in the list.
- ***Right Mouse Click*** on the column ***State*** to set from ***Off*** to ***On*** [indicated by green light].
- ***IN*** is automatically activated.



- If required, change the frame time.

  - ***Right Mouse Click*** or ***Left Mouse Double-Click*** on the column ***ms / FPS*** and enter the required number.

  - The frame time [in milliseconds; ms] affects the frame rate. The frame rate specifies how fast data is sent to the device or received from it [in Frames Per Second; FPS].

  - Increase the frame time in order to decrease the frame rate [e.g., 40 ms = 25 FPS].

  - Decrease the frame time in order to increase the frame rate [e.g., 20 ms = 50 FPS].

  - The default value is 30 ms / 33.3 FPS.

  - The minimum value is 1000 ms / 1 FPS.

  - The maximum value is 5 ms / 200 FPS.

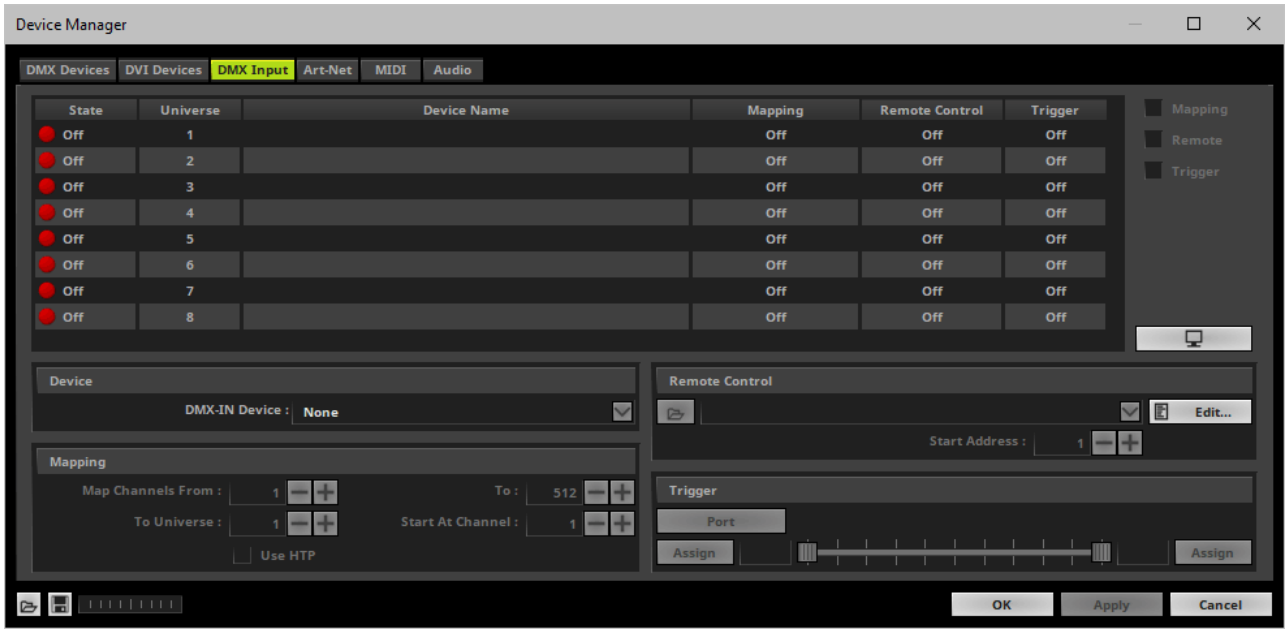
  Please note: If you want to output high frame rates, make sure to set Main Mixing FPS in the Options to the same value in order to render the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated].

  Please note: If you want to input high frame rates, make sure to set DMX Controller Input FPS in the Options to the same value in order to process the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated].

  - **Some LED fixtures might have problems with a low frame time / high frame rate. Then, it is recommended to increase the frame time / decrease the frame rate.**

4] Activating DMX Input

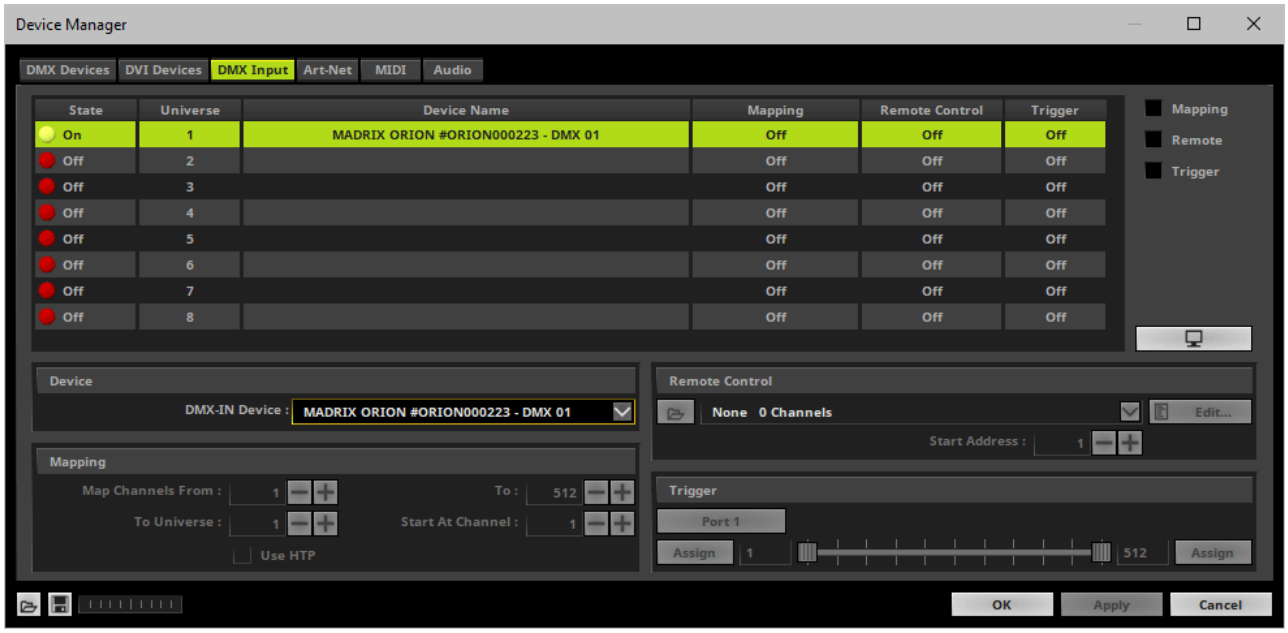
- Go to the menu ***Preferences > Device Manager... > DMX Input***



- Select your preferred DMX ***Universe*** in the list.

  [By default, DMX universe 1 to 8 are listed. If you wish to increase the number of DMX-IN universes, you can change the setting under menu ***Preferences > Options... > Performance***]

- Choose your ***DMX-IN Device*** in the section ***Device***. Select ***MADRIX ORION***



- DMX-IN is now activated. MADRIX 5 can already receive DMX data.
- Now, choose how to use incoming data as explained below.

5] DMX-IN

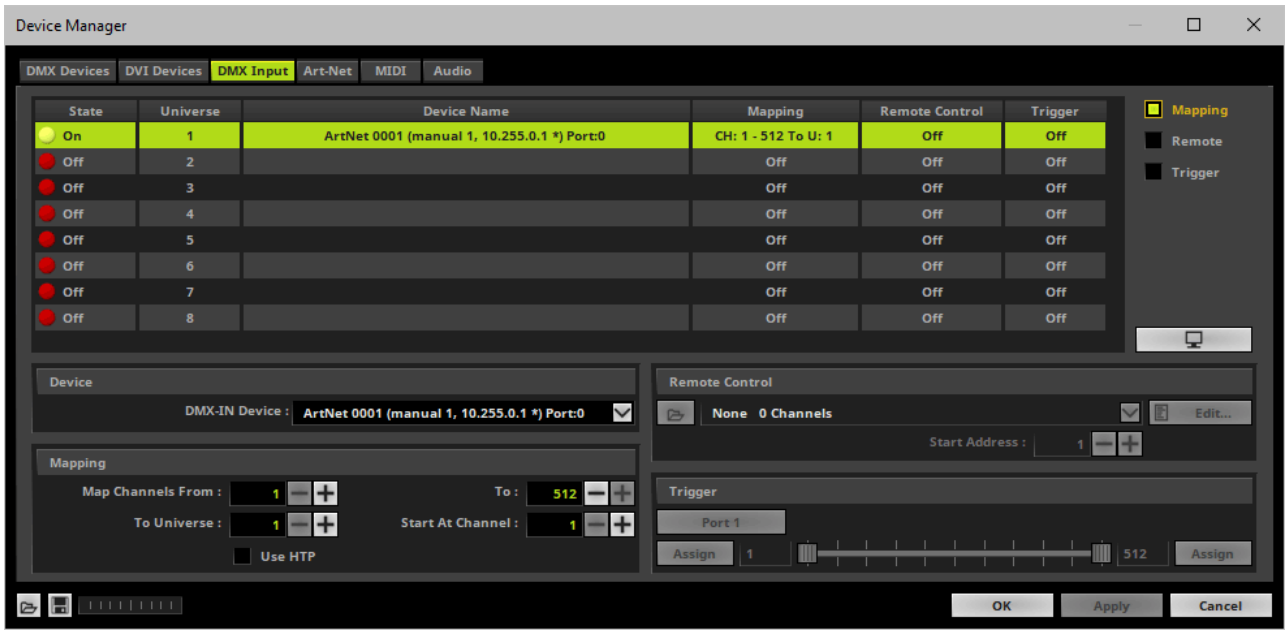
Data

- At this point, MADRIX 5 is now already receiving any incoming data.
- You can now use this data, for example for Scripts and Macros.
- If you want to monitor incoming signals, select your DMX universe/DMX device in the list and click 

Mapping

- Use Mapping, if you want to route incoming DMX signals through MADRIX 5 to your output [DMX-Thru].

- First, select your device in the list.
- Activate ***Mapping***
- This feature maps incoming data to the specified DMX universe and channels.



- Configure the following settings in the section ***Mapping***

  - Map Channels From - Defines which incoming channels are used. This is the start channel to specify the range of channels.

  - To - Defines which incoming channels are used. This is the end channel to specify the range of channels.

  - To Universe - Defines onto which output DMX universe MADRIX 5 should map the specified range of incoming channels.

  - Start At Channel - Defines the first DMX channel of the output DMX universe MADRIX 5 should use.

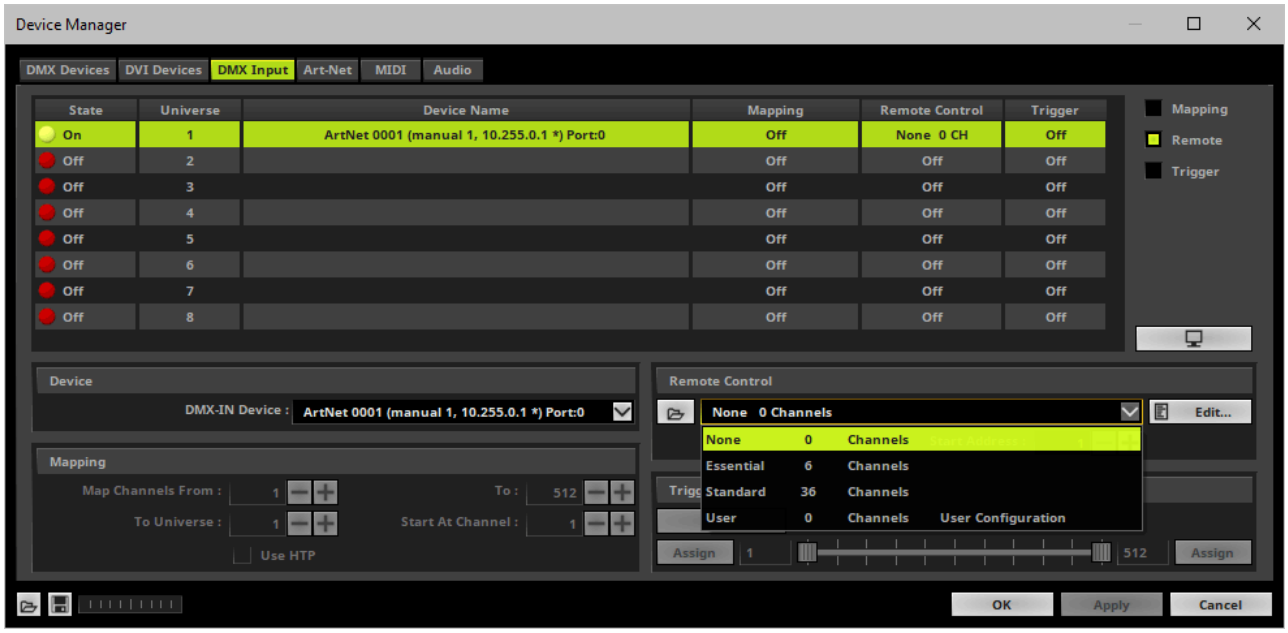
  - Use HTP - Activates the Highest Takes Precedence feature. You can map incoming data to a DMX address range that MADRIX 5 already controls. Use HTP and MADRIX 5 will compare incoming values with the DMX data it sends to the DMX output. As a result, MADRIX 5 will only use the highest of both values on a particular channel and send it to the output.

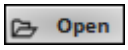
- Click ***Apply*** to confirm.

Remote Control

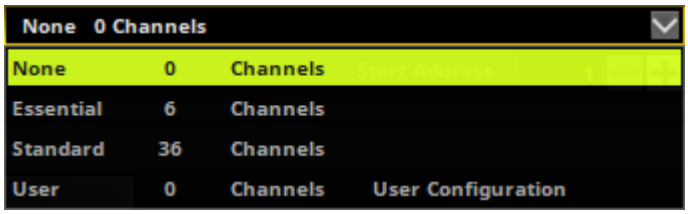
- Use Remote Control, if you want to control the MADRIX 5 Software remotely

- First, select your device in the list.
- Activate ***Remote***
- Select one of the built-in protocols in the section ***Remote Control*** as explained below or create your own remote configuration.

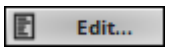




Open **-** Loads a previously saved MADRIX 5 DMX Remote Configuration file [of the file type *.mdrx].



Protocols - Choose from a pre-configured protocol [configuration].



DMX-IN Remote Editor **-** Allows you to modify a configuration or create a new configuration.



Start Address **-** Defines on which particular DMX channel the protocol should start. The whole protocol

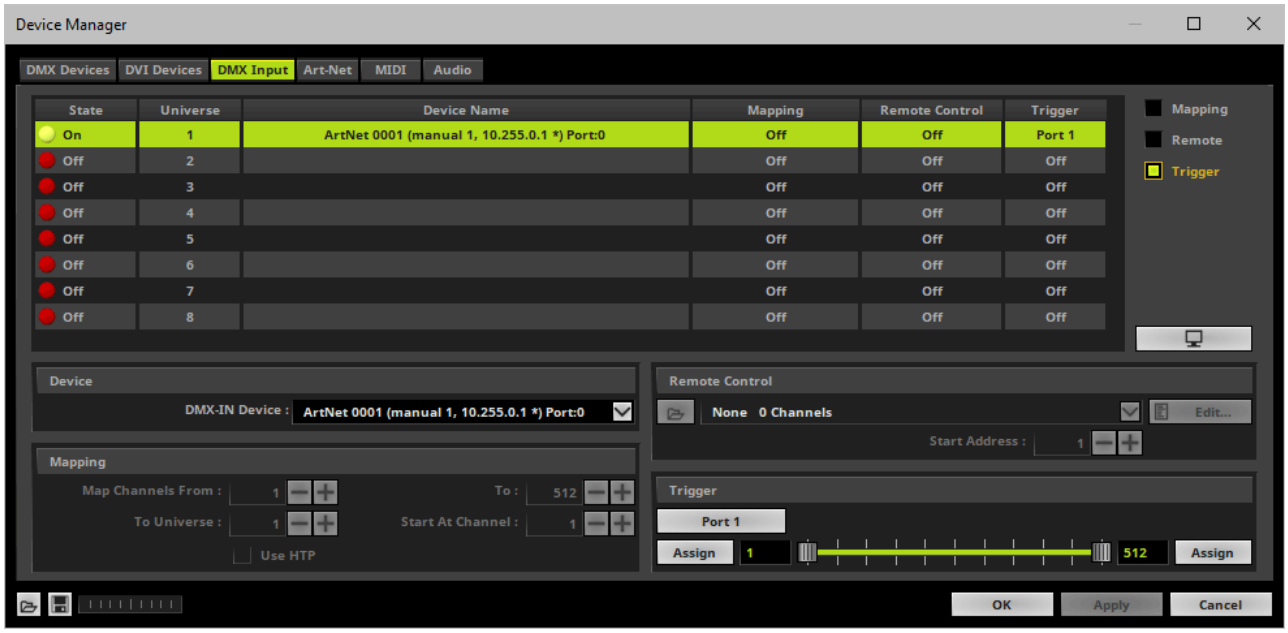
will be mapped to this new address area.

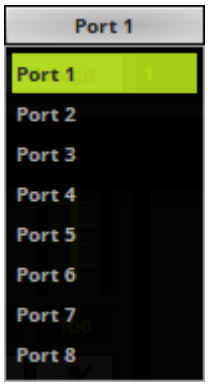


DMX Watcher - Opens the DMX Watcher to monitor your DMX output or input.

Trigger

- Use Trigger, if you want to use incoming signals for the MADRIX 5 TRI Effects.
- First, select your device in the list.
- Activate ***Trigger***



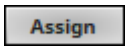


Port - Defines the port [Port 1 - 8] that is assigned to this DMX-IN Device. MADRIX 5 allows you to send trigger signals from up to 8 different devices [8 ports] and assign a MADRIX 5 TRI Effect the corresponding port.



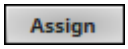
Value Range - Defines the range of incoming DMX values that can be used as trigger signal.

- The minimum and default value is 1.
- The maximum and default value is 512.



Assign Minimum Value - Automatically assigns the minimum value when using the controller.

- Click ***Assign*** and use the control on your controller for the minimum value and the value will be set automatically in the MADRIX 5 Software.



Assign Maximum Value - Automatically assigns the maximum value when using the controller.

- Click ***Assign*** and use the control on your controller for the maximum value and the value will be set automatically in the MADRIX 5 Software.

MADRIX
LIGHTING CONTROL

//PART 4

Technical Support

4 Technical Support

Topics Of This Chapter

- Firmware Updates

4.1 Firmware Updates

This topic includes:

- Overview
- MADRIX HARDWARE MANAGER
- Available Firmware Updates

Overview

It is highly recommended to update the firmware should a new firmware version become available.

MADRIX HARDWARE MANAGER

To update your devices, please use the separate MADRIX HARDWARE MANAGER software.

Learn more »MADRIX HARDWARE MANAGER [USB / Ethernet]

Available Firmware Updates

Version	Highlights

ORION Firmware **2.00.7140** MADRIX Version **MADRIX 5.0b** Release Date **July 2018**	▪ Initial firmware release.
ORION Firmware **2.01.7147** MADRIX Version **MADRIX 5.0d** Release Date **August 2018**	▪ Fixed a critical issue that could halt the device in rare cases.
ORION Firmware **2.02.7206** MADRIX Version **MADRIX 5.0e** Release Date **February 2019**	▪ During normal operation, pressing the Reset button now sends an Art-Net PollReply [e.g., Device Manager] and a MADRIX PollReply [MADRIX Device Configuration]. ▪ Fixed an issue that did only apply a new IP address after changing it over USB after disconnecting it from power first.
ORION Firmware **2.03.7236** MADRIX Version **MADRIX 5.1** Release Date **June 2019**	▪ Fixed an issue that only applied a new IP address that was set over USB after a power cycle. ▪ Fixed an issue that did not allow the DMX Channel to be set with help of the MADRIX Device Configuration window over Ethernet. ▪ Fixed an issue that allowed special characters and control characters [ASCII] in names and descriptions, which are not filtered out. ▪ Fixed an issue that did not allow to retrieve the currently set Start Channel over USB when using the MADRIX Device Configuration window.
ORION Firmware **2.03.7252** MADRIX Version **MADRIX 5.1a** Release Date **August 2019**	-
ORION Firmware **2.03.7259** MADRIX Version **MADRIX 5.2** Release Date **November 2019**	-

ORION Firmware **2.03.7261** MADRIX Version **MADRIX 5.3** Release Date **May 2020**	▪ Fixed an issue that could freeze the device if RDM packages were still sent to the device, although it communicated that it does not support RDM.
ORION Firmware **2.03.7291** MADRIX Version **MADRIX 5.4** Release Date **December 2020**	▪ Fixed minor issues.
ORION Firmware **2.04.7304** MADRIX Version **MADRIX 5.4a** Release Date **February 2021**	▪ Added support for hardware version/model 1.3 (#3581, #6459, #6830). ▪ Web configuration page: Fixed an incorrect IP address shown for sACN Multicast Mode (#6562). ▪ Web configuration page: Fixed that the Defaults buttons did not work correctly (#6907). ▪ Fixed a critical issue that could halt the device when receiving an Art-Net OpIpProg request (#6852). ▪ Fixed an issue that displayed voltage at pins other than the connected pin when using Counter (Hysteresis Threshold) as Pin Input Configuration (#6902).
ORION Firmware **2.05.7308** MADRIX Version **MADRIX 5.4b** Release Date **May 2021**	-
ORION Firmware **2.06.7355** MADRIX Version **MADRIX 5.4c** Release Date **July 2021**	▪ **Note: Please reset the device to factory default settings –after– updating to this firmware version!** [Make sure to write down your current settings beforehand. All custom settings will be reset to their default values.] ▪ Added two new measure functions: Time Interval (Short), Time Interval (Long) (#6906). ▪ Web configuration page: Added the option to reboot the device (#7403). ▪ Web configuration page: Added the option to reset the device to factory default settings (#7403). ▪ Fixed an issue that could prevent changed settings from being saved in rare cases after a power cycle (#5382). ▪ Fixed an issue that did not show the favicon in web browsers (#6460).

	▪ Fixed a critical issue that did not store values > 0 for minimum limits and set them to 0 again after a power cycle (#7400).
ORION Firmware **3.00.7380** MADRIX Version **MADRIX 5.4e** Release Date **October 2021**	▪ Updated the system of the device (#6971, #7116, #7118, #7504, #7544). ▪ Updated the bootloader of the device (#7652). ▪ A single bootloader now supports both Ethernet ports (#7695). ▪ Fixed an issue that still caused the status LED for USB to fade between red and green even if USB had been disconnected (#7543). ▪ Fixed an issue with an incorrectly initialized register that could prevent the firmware update over Art-Net (#7615). ▪ Fixed an issue that produced issues with the USB connection for the bootloader (#7653). ▪ Fixed an issue that did not consistently initiate a PollReply when changing settings using the web configuration page (#7689).
ORION Firmware **3.01.7385** MADRIX Version **MADRIX 5.4f** Release Date **January 2022**	▪ The bootloader can now read the hardware revision/model over USB (#7802). ▪ Unified the way external voltages are calculated across the system (#7892). ▪ Fixed a critical issue that could cause the bootloader on hardware revision 1.2 to freeze at startup with the status-LED Power being permanently on (#7808). ▪ Fixed an issue that showed the external voltage for Power incorrectly on the web configuration (#7892). ▪ Fixed a rounding error for external voltages shown on the web configuration (#7892). ▪ Fixed a critical issue that did not apply new values when changing a large number of settings on the web configuration at once (#7895).
ORION Firmware **3.02.7387** MADRIX Version **MADRIX 5.4g** Release Date **March 2022**	-
ORION Firmware **3.03.7390** MADRIX Version **MADRIX 5.4h** Release Date **April 2022**	▪ Web Configuration: Added the possibility to edit the ShortName identifier for Art-Net (#8159). ▪ Web Configuration: Now shows the uptime of the device (#8183). ▪ Optimized how value ranges are checked and processed (#8210).
ORION Firmware **4.01.7397** Bootloader **4.01.9396**	▪ Added support for new hardware components (#8029, #8649). ▪ Bootloader 4.0: Fixed an issue that did not always respond to firmware packets being sent over Art-Net (#8027). ▪ Bootloader 4.0: Added support for new hardware components (#8028). ▪ Bootloader 4.0: A single Art-Net PollReply is being sent after starting and remaining in the bootloader (#8032).

MADRIX Version **MADRIX 5.5a** Release Date **July 2022**	▪ Fixed an issue that did not recognize hardware revision 1.3 (#8643).
ORION Firmware **4.02.7398** MADRIX Version **MADRIX 5.5b** Release Date **August 2022**	▪ The bootloader version can now be provided by the firmware over USB (#8874).
ORION Firmware **4.03.7401** MADRIX Version **MADRIX 5.5c** Release Date **October 2022**	-
ORION Firmware **4.04.7403**	-
ORION Firmware **4.05.7407** Release Date **January 2023**	▪ Improved reliability by ensuring that network settings are always properly saved (#9213). ▪ Added automation options to set the value of the first pin for all other pins as well as automatic numbering of the DMX channels (#9291). ▪ Added the development hash to the firmware version to the Device Information section (#9361).
ORION Firmware **4.06.7408** Release Date **April 2023**	▪ Fixed an issue that uncontrolledly added zeros or possibly data to the HTML source code of the web configuration via a Firmware's hash value (#9569).
ORION Firmware **4.07.7413** Release Date **April 2023**	-
Bootloader **5.00.7418** Release Date **April 2023**	▪ Bootloader 5.0: Is able to provide the MAC address of the device over USB (#9389).

ORION Firmware **5.00.7417** Release Date **April 2023**	▪ Streamlined and freed up system resources (#7922, #8553).

MADRIX LIGHTING CONTROL

//PART 5

General

5 General

Topics Of This Chapter

- Glossary
- PC Power Management
- Tips [Microsoft Windows / Networks / USB]
- Web Links

5.1 Glossary

2D

MADRIX 5 makes it possible to control numerous LED fixtures, also of different kinds, and to position them according to your needs in nearly any form or shape. This could be LED walls, arch shapes, ceilings, stripes, tiles, dance floors, etc. You can control pixel by pixel [pixel mapping].

3D

MADRIX 5 supports volumetric pixel rendering as well [voxel mapping]. That means, MADRIX 5 also allows you to control real 3D LED matrices. This approach is fundamentally different to the 3D projections or the physical layout of 2D surface areas that are widely known nowadays.

Art-Net

Art-Net is a communication protocol that allows to distribute DMX512 data over Ethernet network. Often, so-called Art-Net nodes then act as Ethernet-to-DMX512 converters and hardware interfaces. MADRIX LUNA is such an Art-Net node, for example.

Art-Net Remote

Art-Net Remote refers to DMX512 input that is sent and received over Ethernet network.

CITP

Is another communication protocol for exchanging information, often used between media servers, lighting consoles, and visualizers.

Colorlight 5A, Colorlight A8, Colorlight T9, Colour Smart Link

Are network-based communication protocols to control compatible LED fixtures and classified as DVI-based output in MADRIX 5.

DMX512 [DMX-OUT]

DMX512, often abridged to DMX, is an unidirectional communication protocol used mainly to control stage lighting, which uses 5-pin XLR connectors as defined by the standard. 3-pin connectors are also common, but not defined as standard connectors.
When working with DMX-based products, each fixture needs a specific attribution via its DMX channel and its DMX universe. With the specific DMX channel and DMX universe, the LED product can be identified directly for a correct communication with the fixture.

DMX-IN

You can send or receive DMX512 data. DMX-IN refers to DMX512 input, which you can receive in MADRIX 5.

DMX Channel

A total of 512 DMX channels is available per DMX universe. Each DMX channel is an individual control channel. Valid values range from 0 to 255, with a total of 256 values.

DMX Universe

A DMX universe contains 512 DMX channels and represents 1 DMX line. To control more than 512 DMX channels, more than 1 DMX universes need to be used. For example, 2 DMX universes represent 1024 DMX channels.

For example, you can control 170 **RGB** fixtures per DMX universe. That means, calculating 170 fixtures x 3 channels results in 510 DMX channels. Therefore, channel 511 and 512 will be left empty.
And if your are using more then 170 fixtures, those DMX channels will be assigned to a new DMX universe [e.g., DMX universe 2].

DVI

DVI is another way to output a video signal for your LEDs. Certain LED products use this type of communication. MADRIX 5 features 2 DVI outputs, which are 1-to-1 output windows. You can then send the DVI outputs to any

graphics card port [such as, VGA, HDMI, DVI, etc.]. Other solutions use screen-capturing to capture such a DVI output window and send them to the LED controller via Ethernet.

Eurolite T9

Is a network-based communication protocol to control compatible LED fixtures and classified as DVI-based output in MADRIX 5.

Fixture

When talking about an LED product, the specific product is often called fixture. When talking about fixtures, often you will automatically get the information about the number of color channels [e.g., RGB] and the number of pixels.

Input

MADRIX 5 can send data out, but at the same time data can be sent to the software. That means data is sent to the MADRIX PC through various means [mostly USB or network]. MADRIX 5 can then be controlled remotely by you, or you can merge or use incoming signals, etc.

IP Address

Is an identifier for devices that enables network communication. When using network protocols, it needs to be set up for each individual sender or recipient in the network.

KiNET

KiNET, the Philips Color Kinetics network protocol, is another communication protocol. It transfers data over Ethernet network as well. Only declared Philips Color Kinetics products work with this type of protocol.

MAC Address

Is a unique, technical identifier for interfaces in a network.

MA-Net

Is a proprietary communication protocol from MA Lighting between compatible products in a network.

MIDI

MIDI is short for Musical Instrument Digital Interface, a well-known technical standard that provides standardized ways for equipment to communicate. In case of MADRIX 5, MIDI can be used for MIDI Time Code, MIDI notes, or other MIDI hardware, such as DJ/VJ controllers.

NDI

Network Device Interface is a network-based video technology by NewTek.

Output

To control your LEDs, MADRIX 5 needs to send data to the LEDs. In this way it communicates with your controllers and/or your LEDs. This is referred to as output. There are different ways on how this process can work [e.g., protocols]. But most importantly, you need to configure which output method MADRIX 5 should use in order to control your LED products.

Philips Hue

Is a proprietary range of products including communication protocol for personal wireless lighting made by Philips Lighting.

Pixel

A pixel refers to one lighting point. When using RGB LEDs, one pixel usually includes 1 [or 2] red LEDs, 1 blue LED, and 1 green LED. 1 control channel is required for each color [3 in total per pixel], but as a total they represent one pixel. LED fixtures often have a certain number of pixels per unit.

Pixel Mapping

MADRIX 5 contains an effect generator as well as a graphics render engine that support pixel rendering for 2D effects and volume rendering for 3D effects.

Remote HTTP

Remote HTTP is a way to control MADRIX 5 remotely using standards known from the internet [HTTP - Hypertext Transfer Protocol].

RGB

The acronym stands for Red, Green, Blue. The 3 colors are the main colors for additive color mixing of LED fixtures. As a result, a vast number of colors can be mixed.

RGBW

The acronym stands for Red, Green, Blue, White. The 4 colors are also used for additive color mixing of LED fixtures. As a result, a vast number of colors can be mixed.

Spout

Spout is a real-time video sharing framework for Windows.

Streaming ACN [sACN / E1.31]

Streaming ACN or sACN or E1.31 is another communication protocol that allows DMX512 data to be transmitted over Ethernet. Data is broadcasted by MADRIX 5 to recipients in the network.

Subnet Mask

Is a technical grouping mechanism for network devices. When using network protocols, it needs to be set up for each sender or recipient in the network for correct data routing.

Virtual LED Matrix

MADRIX 5 needs to know how your LED installation looks like and which fixtures you want to use. [You can use the Matrix Generator or the Patch for this task.] In the end you will have configured the virtual LED matrix with its total pixel count in X, Y, and Z set up as the Matrix Size as well as the position and location of each pixel or fixture. The virtual LED matrix represents your LED installation in MADRIX 5.

Volume Rendering / Voxel Mapping

MADRIX 5 contains an effect generator as well as a graphics render engine that support pixel rendering for 2D effects and volume rendering for 3D effects.

Voxel

Voxel is short for volumetric pixel. In addition to its pixel mapping features [2D], MADRIX 5 can control 3D LED matrices, which is called voxel mapping. Lighting effects are correctly mapped to each voxel of a 3D LED matrix.

XLR Pin Layout

XLR connectors are used for DMX512. There are different types.

5-Pin, Female	5-Pin Male	Pin Assignment	3-Pin, Female	3-Pin, Male
		1 Ground 2 Data - 3 Data + 4 Spare 5 Spare		

5.2 PC Power Management

This topic includes:

- Why Is Power Management Important?
- Usage
- Activate High Performance
- How To Change USB Power Settings

Why Is Power Management Important?

We strongly recommend to deactivate all power saving options in Microsoft Windows in order to ensure an interruption-free operation of MADRIX 5.

Microsoft Windows operating systems offer a wide variety of power-management options. In most cases, laptops, notebooks, and netbooks benefit from a longer battery life if a good power management is in use. But certain problems might occur because of computer power savings nevertheless:

- After a while your MADRIX KEY cannot be identified by the software anymore.
- Your hardware interfaces are suddenly deactivated.

Usage

Make sure to set up power-saving settings especially if you are using:

- A MADRIX KEY [USB dongle]
- MIDI controllers [via USB]
- USB hardware interfaces [such as MADRIX NEO]
- A notebook/laptop to run MADRIX 5

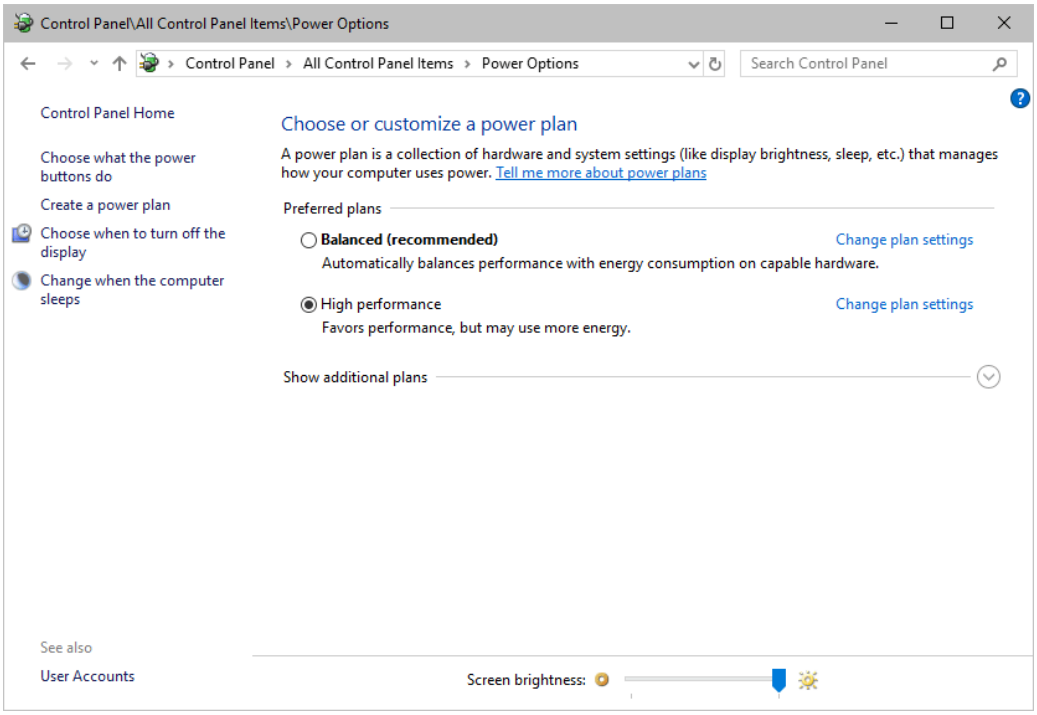
Additionally:

- Make sure to change the USB power settings.
- Especially for notebooks, we recommend to activate the High performance power plan.

Activate High Performance

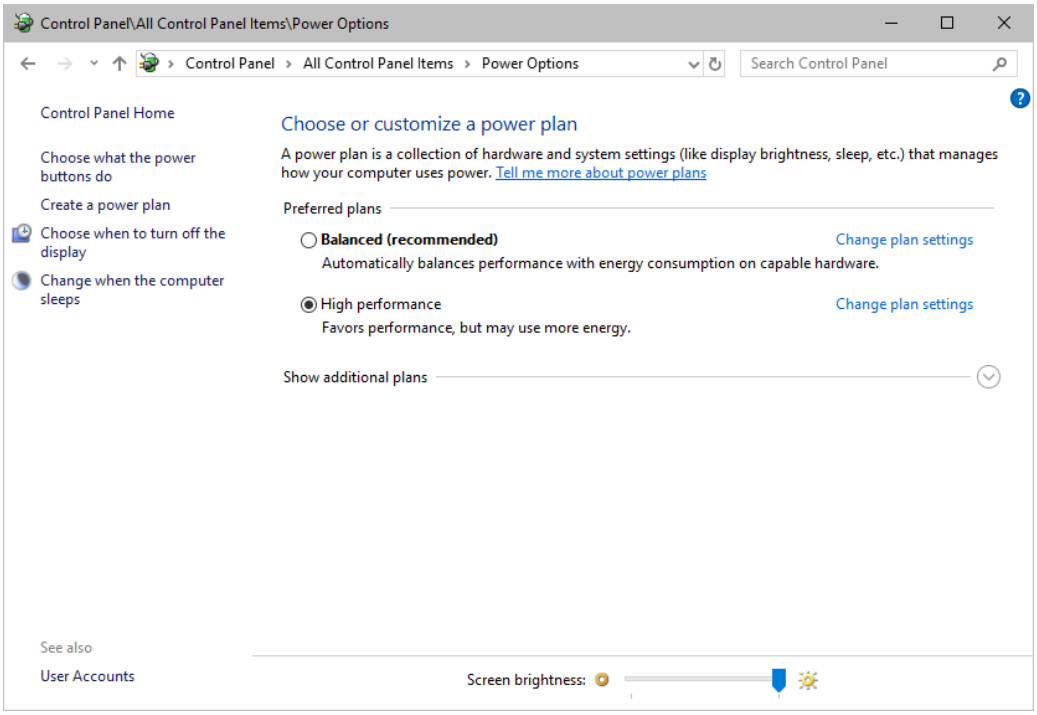
This setting will make sure that your notebook or laptop will have all its potential performance available for MADRIX 5.

- In Windows 10, select ***Start > Windows System > Control Panel > Power Options***, and change the power plan to ***High performance***
  [You might need to click on ***Show additional plans***].

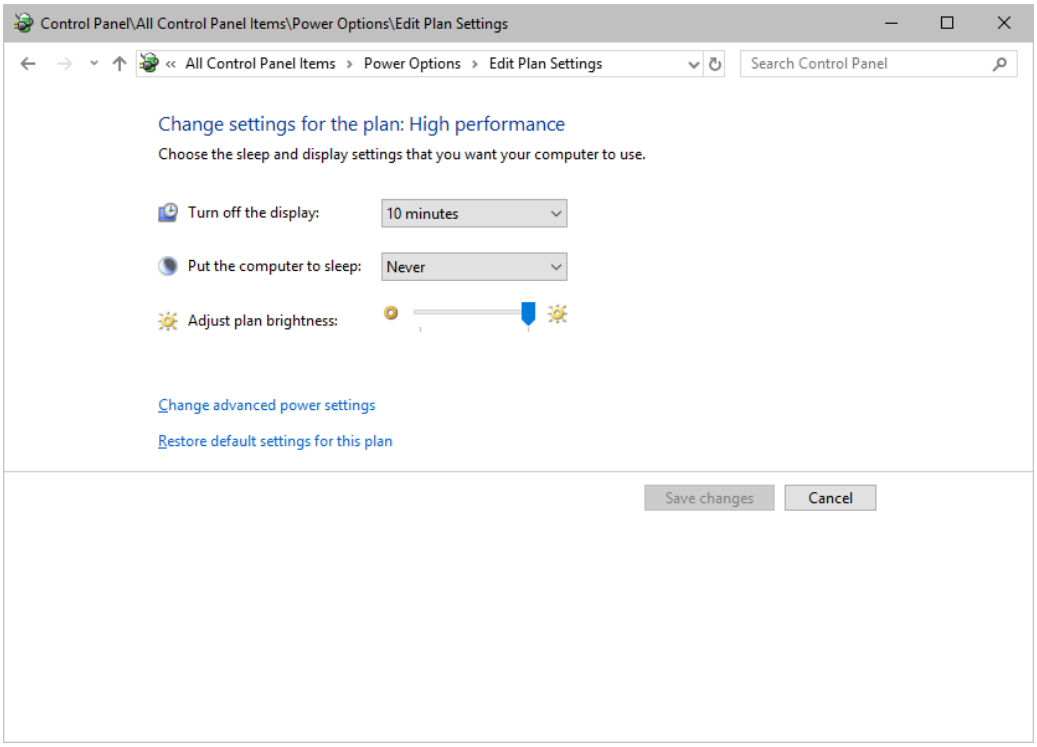


How To Change USB Power Settings

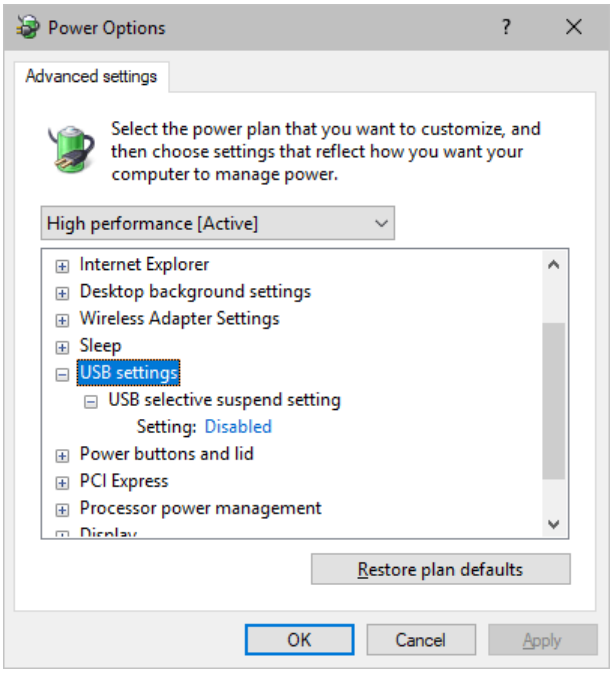
- In Windows 10, select ***Start > Windows System > Control Panel > Power Options > Change plan settings***



- Click ***Change advanced power settings***



- Especially the ***USB settings*** are important. Disable the suspend settings!



- Change any other settings that might interrupt the operation as required.

5.3 Tips [Microsoft Windows / Networks / USB]

This topic includes:

- Error When Saving Files
- USB
- The Windows Firewall
- Working With Ethernet Networks
- Changing The Priority Of Network Adapters
- Working With Files
- Operating System Security
- Up-To-Date Drivers
- Windows Restart / Shut Down
- Monitoring Computer Performance

Error When Saving Files

If you are experiencing issues when trying to save files, there are two solutions to this problem:

- ***Right Click > Run as administrator***

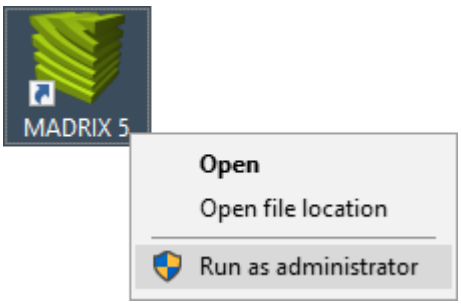
  - In order to save files as a user that is logged-in into Windows, you need to have the permissions set by Windows to do so.

  - When you do not have the right permissions, saving files can lead to errors.

  - To circumvent such issues, you can run the MADRIX Software as administrative computer user, the so-called administrator.

  - Perform a ***right mouse click*** on the ***MADRIX.exe*** [or a shortcut to the MADRIX 5 Software] and choose ***Run as administrator***

  - **Note:** You need to have access to the administrator account (i.e., password). Logging in as administrator grants extensive rights for any computer changes. If you are not familiar with Windows or computers, please seek advice.



- ***Choose A Different Directory***

  - When you are experiencing issues and running as administrator is not an option, choose a different directory on your harddisk to save the files.

  - There are locations on your computer/harddisk where you will have the permission to save files. Choose such a location.

  - Examples are:

  C:\Users\USERNAME\Desktop

  C:\Users\USERNAME\Documents

  [***USERNAME*** specifies your Windows account name.]

USB

Among others, USB is an important way to work with MADRIX 5, MADRIX KEYs, MADRIX hardware interfaces, MIDI controllers, etc. In order to ensure a stable work environment, we highly recommend setting up corresponding USB settings in Windows.

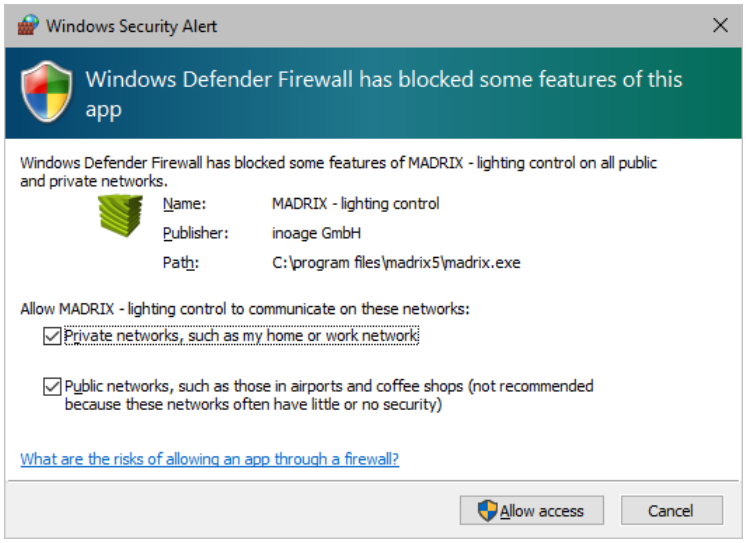
Learn more »PC Power Management

The Windows Firewall

Correct Settings

The primary purpose for the Windows Firewall [or any other firewall] is to block any unwanted incoming or outgoing data and access. But this can lead to problems, when data that should go through is automatically blocked.
MADRIX 5 will automatically set the correct firewall settings for you during the installation process.

Please follow the steps below if this Windows message appears when you start the MADRIX 5 Software for the first time.



Select and set a checkmark for

- ***Private networks***

and

- ***Public networks***

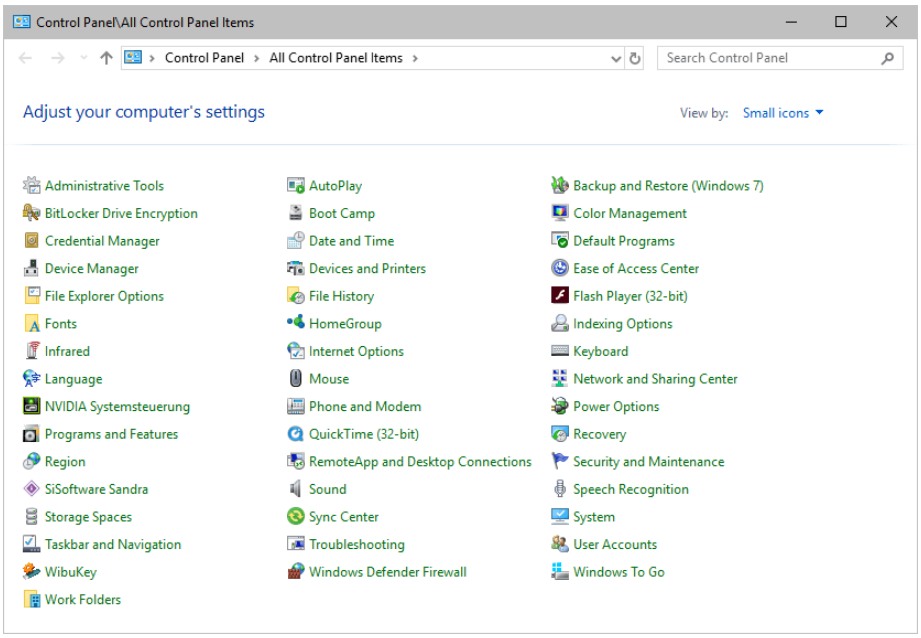
- Click ***Allow access*** to confirm.

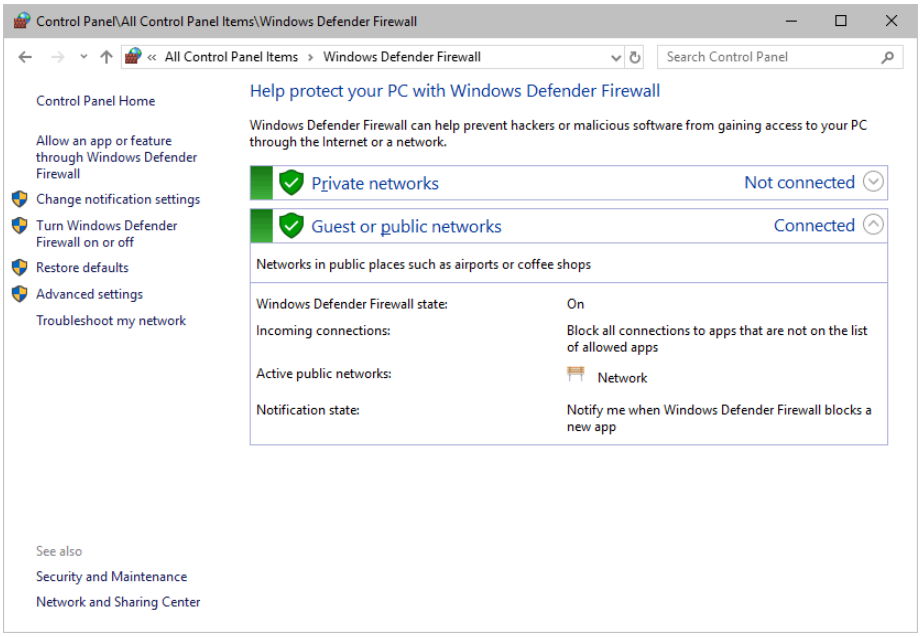
Not selecting both options can cause problems with network communication.

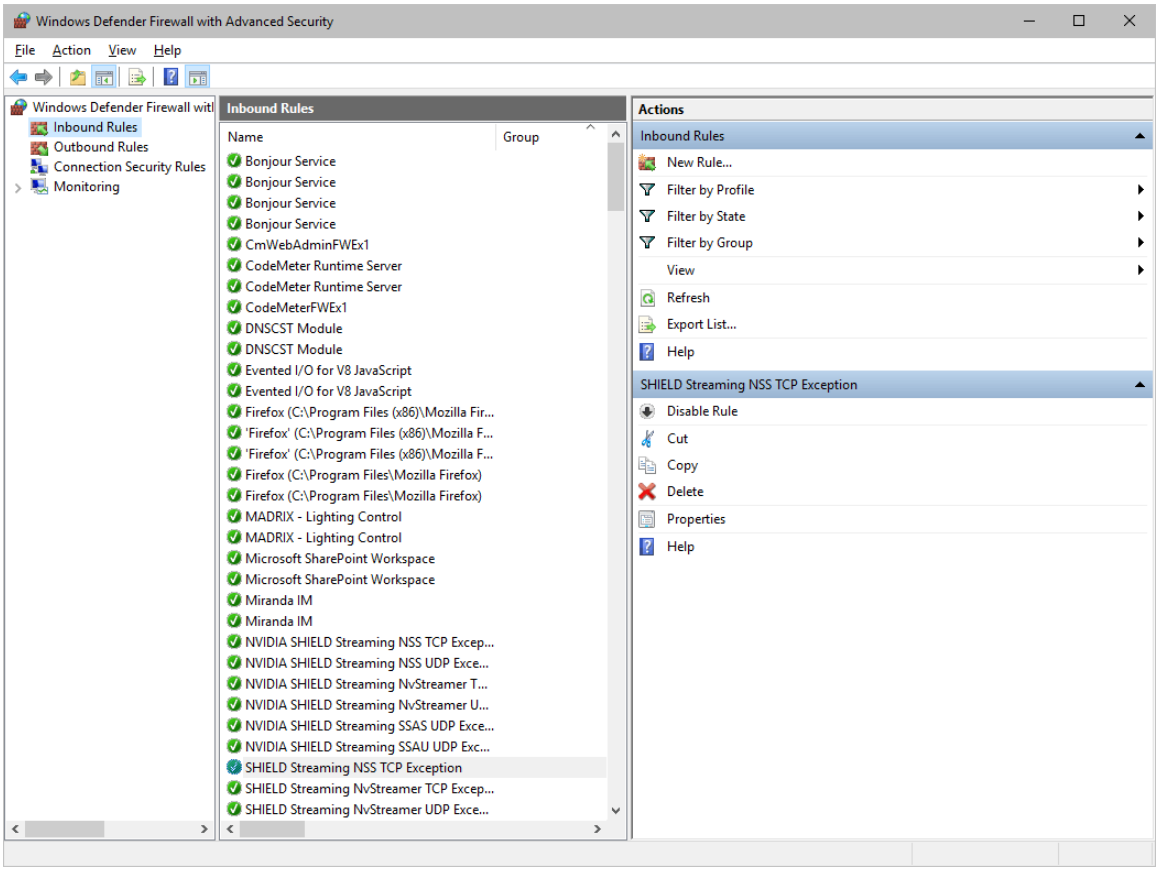
Resetting The Settings

If you have already chosen the wrong options MADRIX 5, you can delete the settings and choose again.

- In Windows 10, go to ***Start > Windows System > Control Panel > Windows Defender Firewall > Advanced settings > Inbound Rules***







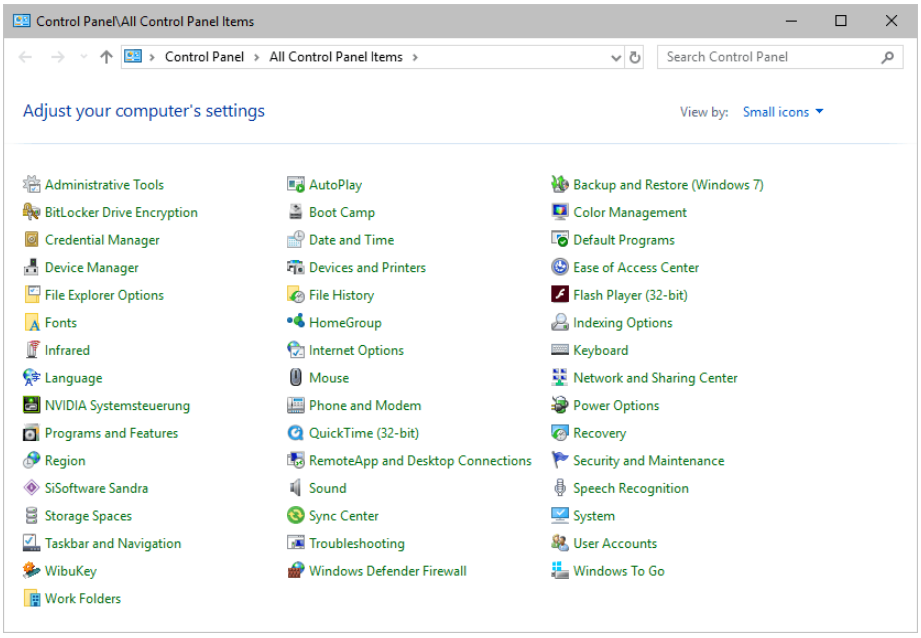
- Select and delete any entries relating to MADRIX 5 [e.g., madrix.exe, MADRIX - music makes the light, MADRIX - LIGHTING CONTROL].
- With your next start of MADRIX 5, select both options as described above.

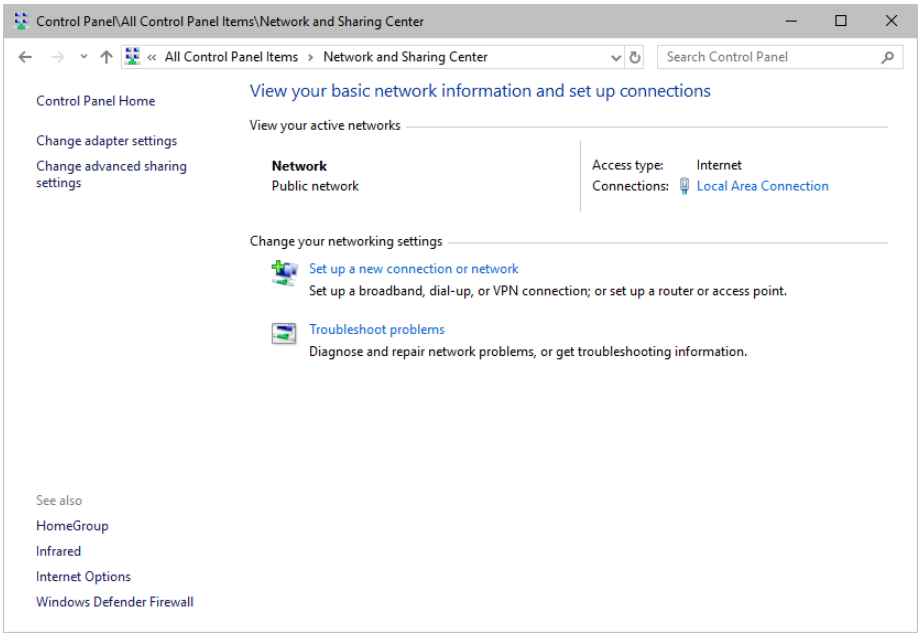
Working With Ethernet Networks

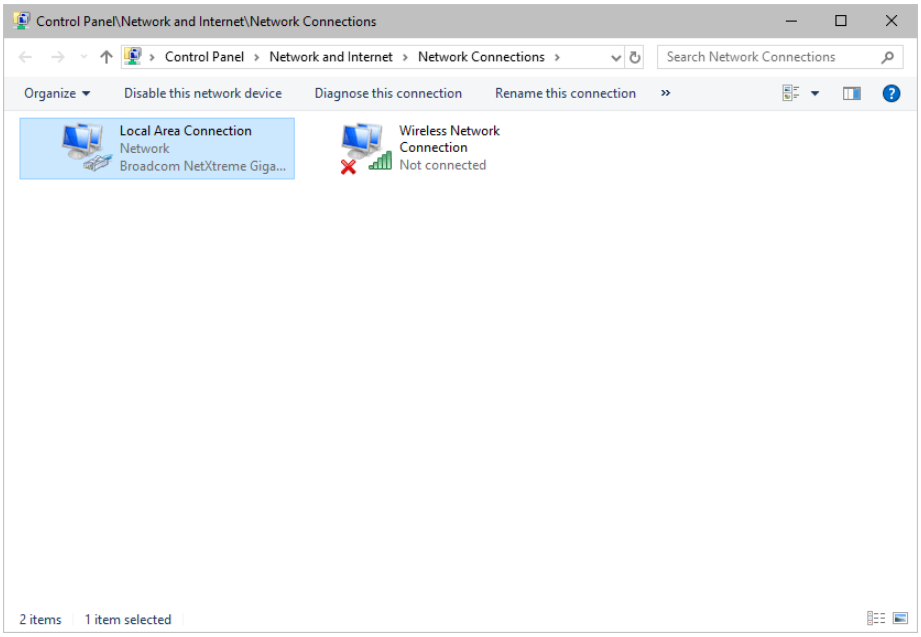
Configuration Of Network Settings

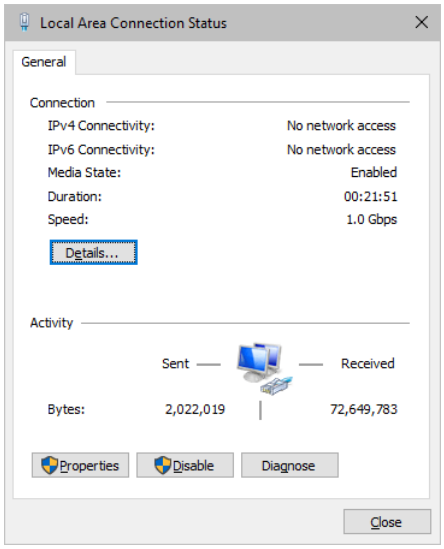
When working with network-based products and MADRIX 5 [for example, Art-Net, KiNET, sACN, etc.], you will have to set up the IP address of your network card in Windows. Learn how to set it up here.

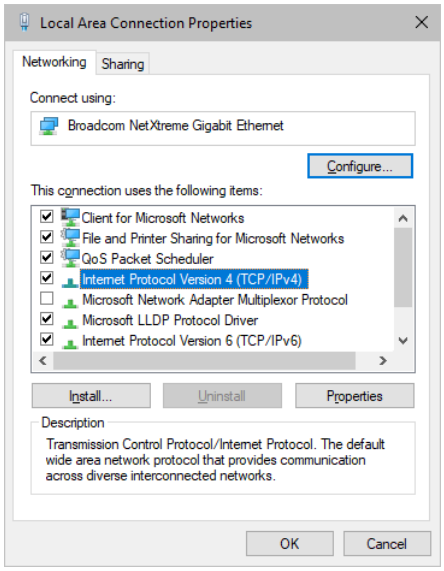
- In Windows 10, go to ***Start > Windows System > Control Panel > Network and Sharing Center > Change adapter settings > Local Area Connection > Properties > Internet Protocol Version 4 (TCP/IPv4) > Properties***

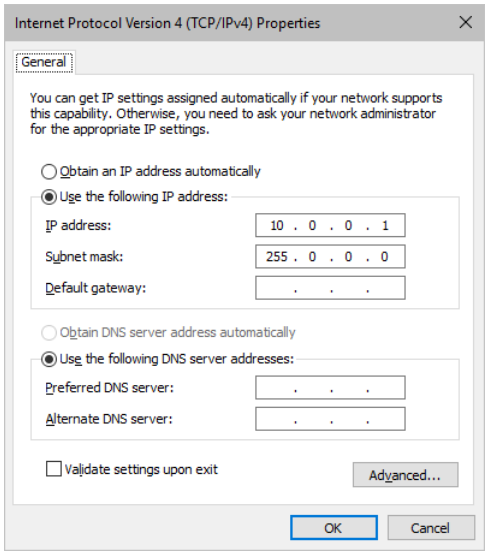



Control Panel\All Control Panel Items\Network and Sharing Center
All Control Panel Items › Network and Sharing Center
Search Control Panel
Control Panel Home
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connections
View your active networks
Network
Public network
Access type: Internet
Connections: Local Area Connection
Change your networking settings
Set up a new connection or network
Set up a broadband, dial-up, or VPN connection; or set up a router or access point.
Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.
See also
HomeGroup
Infrared
Internet Options
Windows Defender Firewall


Control Panel\Network and Internet\Network Connections
Control Panel › Network and Internet › Network Connections
Search Network Connections
Organize
Disable this network device
Diagnose this connection
Rename this connection
Local Area Connection
Network
Broadcom NetXtreme Giga...
Wireless Network Connection
Not connected
2 items
1 item selected


Local Area Connection Status
General
Connection
IPv4 Connectivity: No network access
IPv6 Connectivity: No network access
Media State: Enabled
Duration: 00:21:51
Speed: 1.0 Gbps
Details...
Activity
Sent
Received
Bytes: 2,022,019 72,649,783
Properties
Disable
Diagnose
Close


Local Area Connection Properties
Networking
Sharing
Connect using:
Broadcom NetXtreme Gigabit Ethernet
Configure...
This connection uses the following items:
Client for Microsoft Networks
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol Version 4 (TCP/IPv4)
Microsoft Network Adapter Multiplexor Protocol
Microsoft LLDP Protocol Driver
Internet Protocol Version 6 (TCP/IPv6)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
OK
Cancel



Set up the following settings:

- Enable ***Use the following IP address:***
- ***IP address -*** Sets the IP address for this computer and this network card.

  - If you have several network cars in your computer, you can set up an individual address for each network card.

  - An IP address has 4 parts. Enter the complete address as explained in the specific chapter of this user guide [e.g., 10.0.0.1].

  - You only have to enter the numbers.
- ***Subnet mask -*** Sets up the Subnet mask for this computer.

  - This is an important part of the network settings, just as the IP address.

  - A Subnet mask has 4 parts. Enter the complete address as explained in the specific chapter of this user guide [e.g., 255.0.0.0].

  - You only have to enter the numbers.
- ***OK -*** Click to save your settings.

  - [Make also sure to close the ***Local Area Connection Settings*** with ***OK*** and close the ***Local Area Connection Status*** window with ***Close***.]
- Restart the MADRIX 5 Software if you have changed any network settings!

Learn more below.

Using Several Devices In A Network

Usually, you will use at least 2 devices in a network [for example, 1 MADRIX PC and 1 Art-Net node or 1 MADRIX PC and 1 console]. As explained above, you will need to configure various network settings not only for your MADRIX PC but also for the other devices.

To be able to communicate with each other, all devices have to be in "the same network". That means:

- All devices need to be physically connected with each other [through network equipment, such as hubs or switch and/or network cables]
- All devices need to have compatible network settings

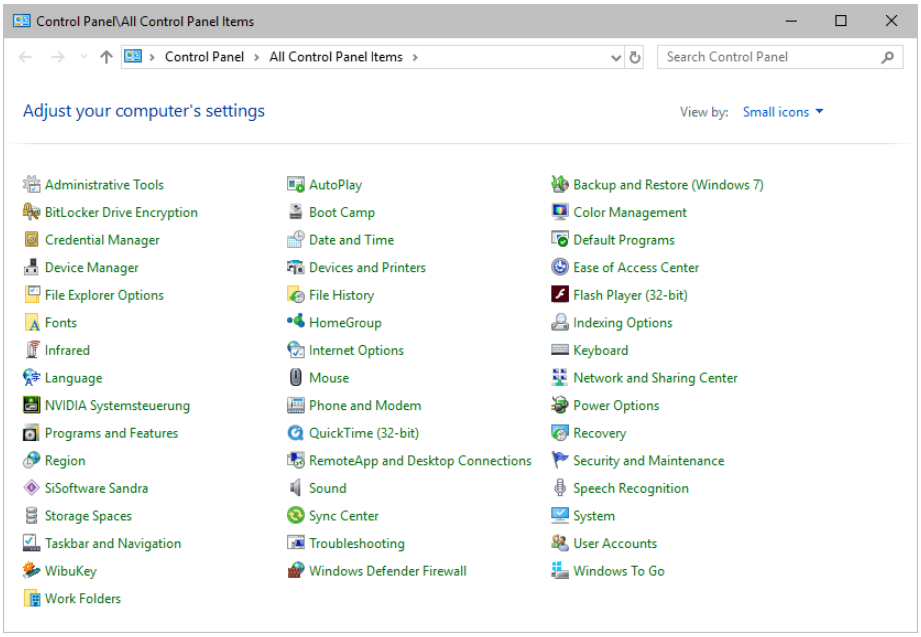
Using several devices in a network does not mean that all should have the same IP address. That will not work! Instead, follow these rules:

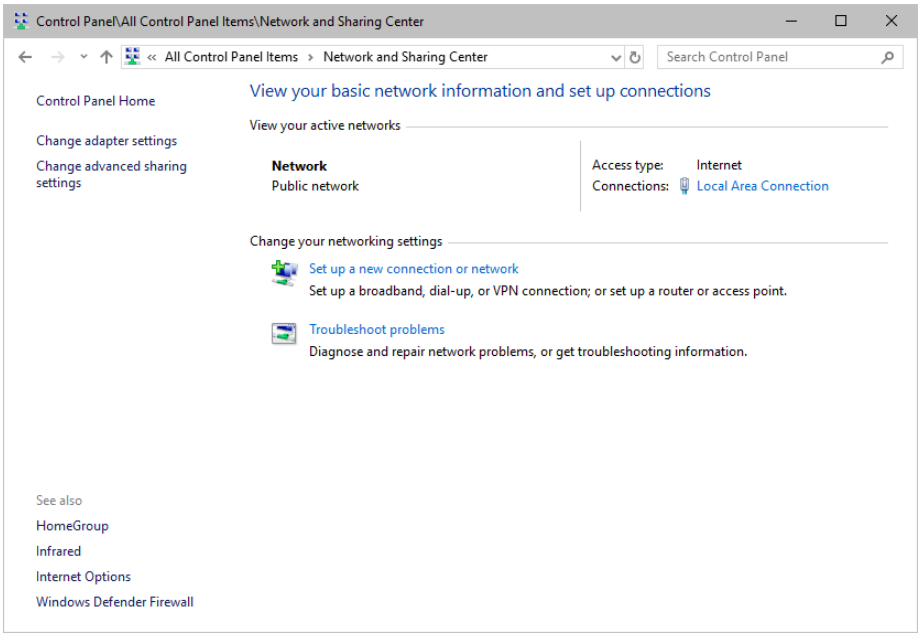
- **Set up all devices within the same IP address range, but never with the same IP address [for example, MADRIX PC: 10.204.226.101 and Art-Net node: 10.204.226.102]**
- **Set up all devices with the same Subnet mask e.g., 255.0.0.0]**
- **If recommended, set up all devices with the same Default gateway [e.g., 10.0.0.1]**

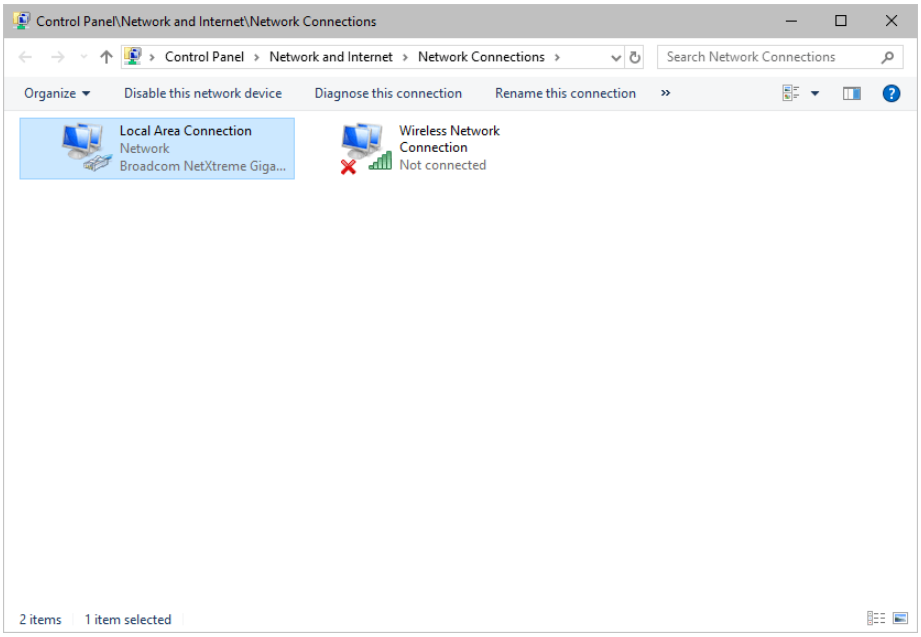
Changing The Priority Of Network Adapters

You can change the order in which Windows and MADRIX 5 accesses your network adapters. By changing the order, you can specify which network adapter [network card] is used first and as the main connection.

- **1]** In Windows 10, go to ***Start > Windows System > Control Panel > Network and Sharing Center > Change adapter settings***

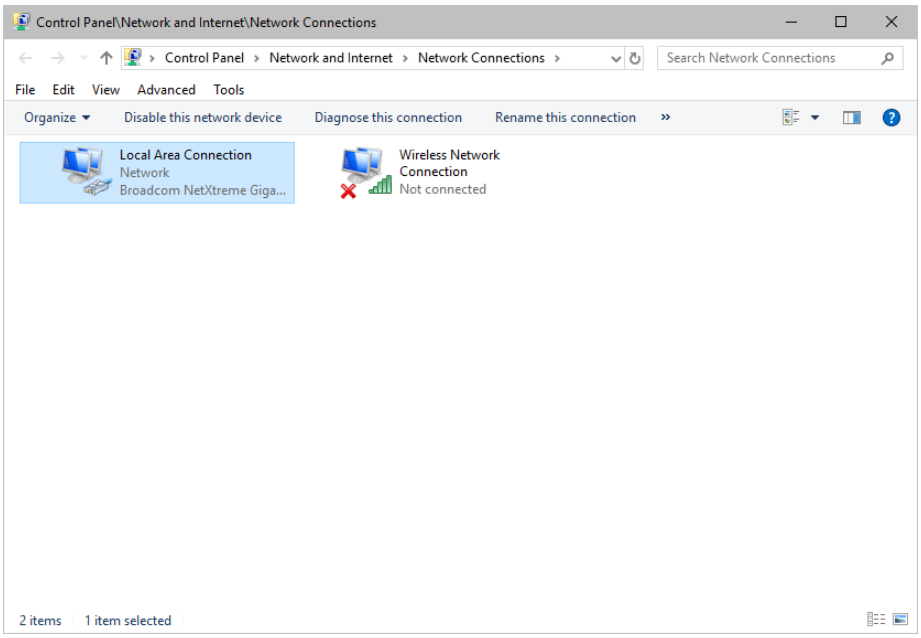

Control Panel\All Control Panel Items
Control Panel › All Control Panel Items ›
Search Control Panel
Adjust your computer's settings
View by: Small icons
Administrative Tools
AutoPlay
Backup and Restore (Windows 7)
BitLocker Drive Encryption
Boot Camp
Color Management
Credential Manager
Date and Time
Default Programs
Device Manager
Devices and Printers
Ease of Access Center
File Explorer Options
File History
Flash Player (32-bit)
Fonts
HomeGroup
Indexing Options
Infrared
Internet Options
Keyboard
Language
Mouse
Network and Sharing Center
NVIDIA Systemsteuerung
Phone and Modem
Power Options
Programs and Features
QuickTime (32-bit)
Recovery
Region
RemoteApp and Desktop Connections
Security and Maintenance
SiSoftware Sandra
Sound
Speech Recognition
Storage Spaces
Sync Center
System
Taskbar and Navigation
Troubleshooting
User Accounts
WibuKey
Windows Defender Firewall
Windows To Go
Work Folders


Control Panel\All Control Panel Items\Network and Sharing Center
« All Control Panel Items › Network and Sharing Center
Search Control Panel
Control Panel Home
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connections
View your active networks
Network
Public network
Access type: Internet
Connections: Local Area Connection
Change your networking settings
Set up a new connection or network
Set up a broadband, dial-up, or VPN connection; or set up a router or access point.
Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.
See also
HomeGroup
Infrared
Internet Options
Windows Defender Firewall



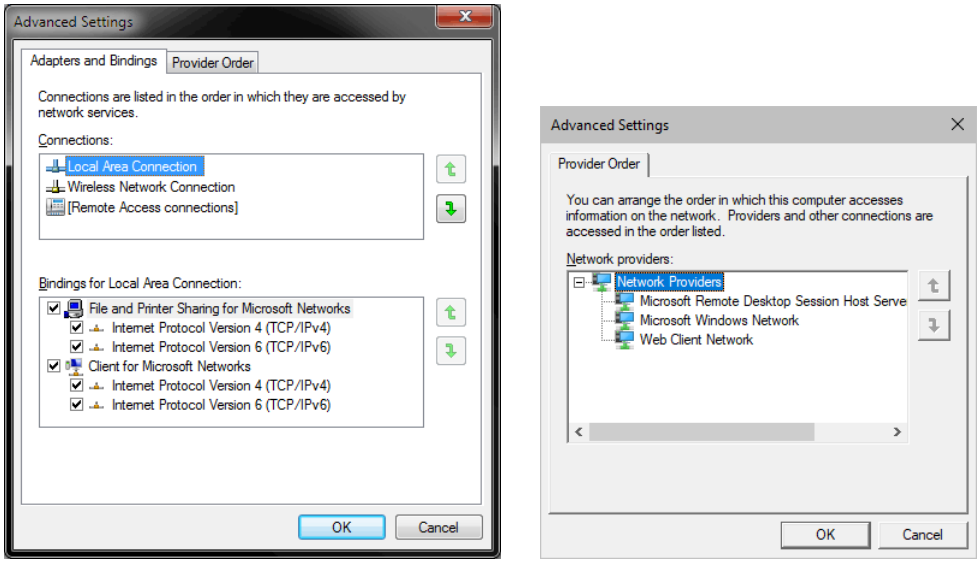
- **2]** Press ***Alt*** on your keyboard.

  - A menu appears at the top, which is otherwise hidden.



- **3]** Go to ***Advanced > Advanced Settings...***

  - A new window opens.



- **4]** Select your preferred network connection[s] in the list of ***Connections:***
- **5]** Change the order by clicking on the ***green up and down arrow buttons*** on the right hand side.
  - The connection which is listed on top, is the first and prioritized adapter.
- **6]** Click OK to confirm.
- **7]** Restart your computer.

Working With Files

When working with computers in general, you should be aware that any digital data is sensitive and prone to failure and hardware errors.
We recommend

- to save regularly when creating a show in MADRIX 5.
- to make backup copies of your show files from time to time [MADRIX 5 Setup files]
- to make backup copies to different or external storage mediums [e.g., USB stick/thumbdrive].

Operating System Security

It is recommended

- to keep Windows up-to-date by installing security updates using ***Windows Update***
- to use a virus detection software when working with files from external sources.

Up-To-Date Drivers

Please always keep all component drivers up to date by installing the latest available driver. Among others, this may include drivers for:

- Processor
- Graphics Card
- USB
- Capture Card
- Sound/Audio Card
- Video Codecs

Windows Restart / Shut Down

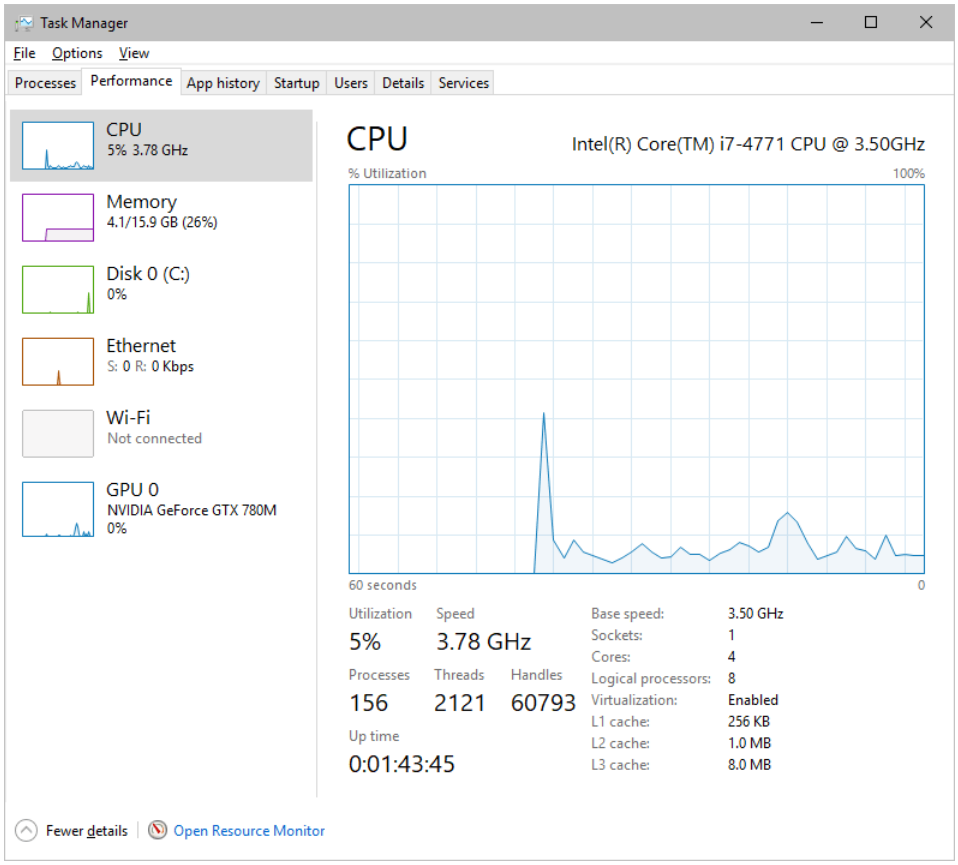
According to the requirements of Windows, MADRIX 5 will behave in the following way:

- MADRIX 5 will be closed instantly, when you trigger a Restart or Shut Down of Windows.
- If you have not saved any changes yet, you may be provided the chance and a short time frame [30 seconds] to react and save your progress before the MADRIX 5 Software is forcefully closed by Windows itself.
- **Make sure to save your files before executing a Restart or Shut Down!**

Monitoring Computer Performance

Windows allows you to monitor the overall performance of your computer.

- Press ***Ctrl + Alt + Del*** and choose ***Start Task Manager***
  [German shortcut: Strg + Alt + Entf]
- A new window opens [Task Manager].
- Go to ***Performance***



- You can now monitor the ***CPU Usage*** as well as the ***Memory*** usage.

- MADRIX 5 has its own monitoring tools.

5.4 Web Links

This topic includes:

- **Overview**

Overview

You can find a selection of useful internet links here:

- MADRIX Website
  »**www.madrix.com**
- Drivers
  »**www.madrix.com/support/download**
- User Guides [Online And Downloadable PDF]
  »**help.madrix.com**
- Hardware Technical Manuals / Quick Start Guides [Downloadable PDF]
  »**help.madrix.com**
- Online Forum
  »**www.madrix.com/support/forum**
- Software Release Notes
  »**www.madrix.com/products/software/releases**
- Online Text Tutorials
  »**help.madrix.com/tutorials/html/index.html**
- Video Tutorials
  »**https://www.madrix.com/training/video-tutorials**

//PART 6

Legal

6 Legal

This topic includes:

- Introduction
- Topics Of This Chapter

Introduction

Legal includes all legal documents and information, including copyright and more.

Topics Of This Chapter

- Imprint And Copyright

6.1 Imprint And Copyright

This topic includes:

- Company And Address
- Copyright
- Credits

Company And Address



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E-mail: »info@madrix.com

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