1. Features

(1). Four ports control maximum 4096 pixels (for example WS2812). But for DMX512, each port outputs 512 channels.

(2). Support ArtNet protocol, 4 universes(each 512 channels) output when H802RA works with Madrix.

(3). Allocate address for DMX512 chips (for example UCS512, TM512)

(4). Controlled by master controller or PC.

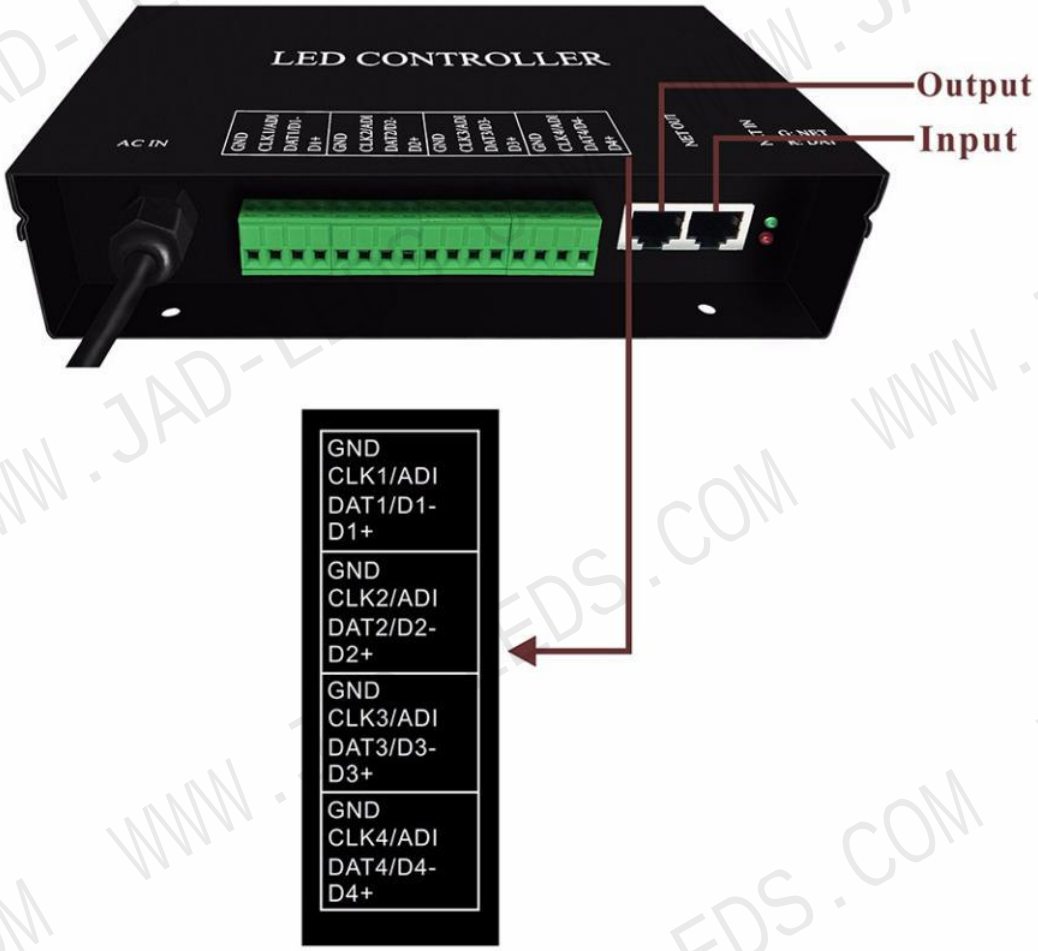
(5). Transmission distance between two controllers is up to 100 meters.

2. Supported Driver Chips

DMX512, HDMX, LPD6803, LPD8806, LPD1882, LPD1889, LPD1883, LPD1886, TM1812, TM1809, TM1804, TM1803, TM512, TM1926, TM1913, TM1914, TM1814, UCS6909, UCS6912, UCS1903, UCS1909, UCS1912, UCS512, UCS8904, APA102, APA104, P9813, WS2801, WS2803, WS2811, WS2812, WS2821, SM16716, SM16711, INK1003, LX1003, MY9221, MBI6021, MBI6024, LD1510, LD1512, LD1530, LD1532,etc.

Note: H802RA supports more than the chips listed above(for example UCS2903 has the same sequence diagram with UCS1903, H802RA supports them all).

3. Product Display



GND and DAT are for chips like TM1812, WS2811, WS2812.

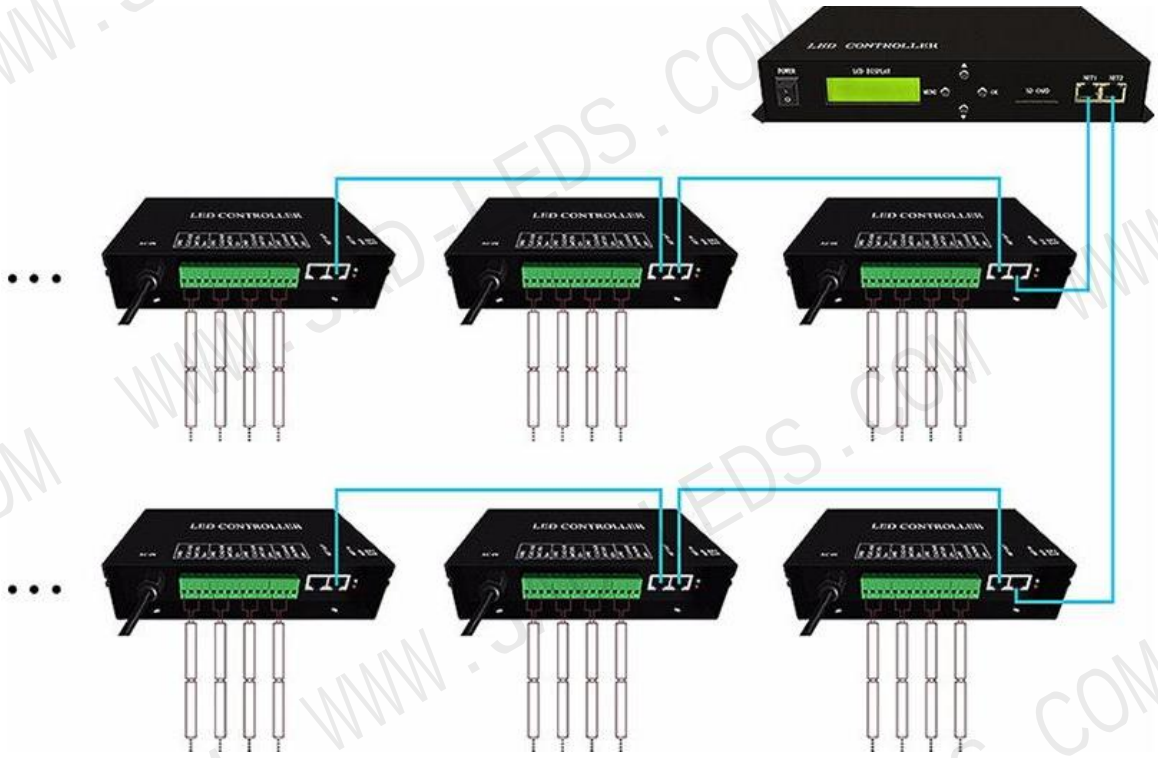
GND, CLK and DAT are for chips like APA102, LPD6803.

GND, D- and D+ are for DMX512 chips like TM512, UCS512.

ADI(address input) is address line for DMX512 chips.

4. Working Mode

(1). Connect to master controller, software is LED Build. Programs are stored in SD card.



LED Build download link:

https://drive.google.com/open?id=0B1gzqyV6hfOgN2pkMV8yMFozYzQ

LED Build Tutorial Video:

https://drive.google.com/open?id=0B1gzqyV6hfOgUnFjeG9EM3VRZjA

(2). Connect to computer, software is LED Studio(our software) or other software that supports Art-Net protocol.

LED Studio download link:

https://drive.google.com/open?id=0B1gzqyV6hfOgNEtYT2o0LWdDNG8

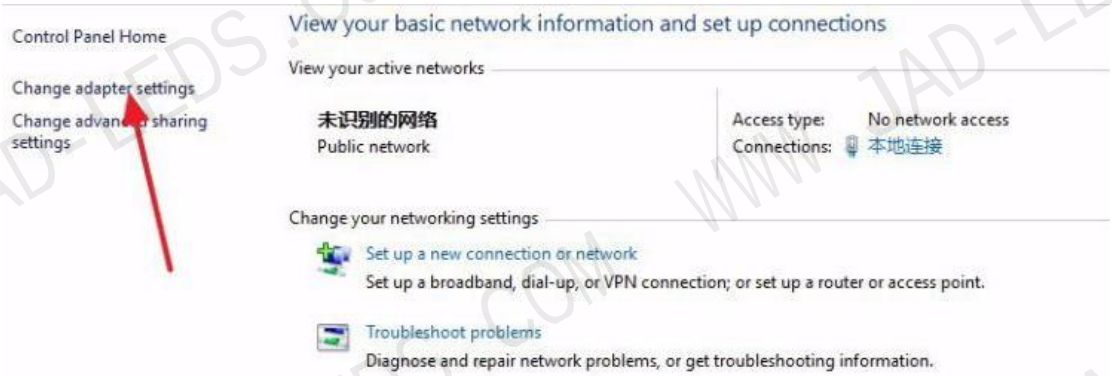
H802RA to PC manual:

https://drive.google.com/open?id=0B1gzqyV6hfOgeGI1M2JaYi1URW8

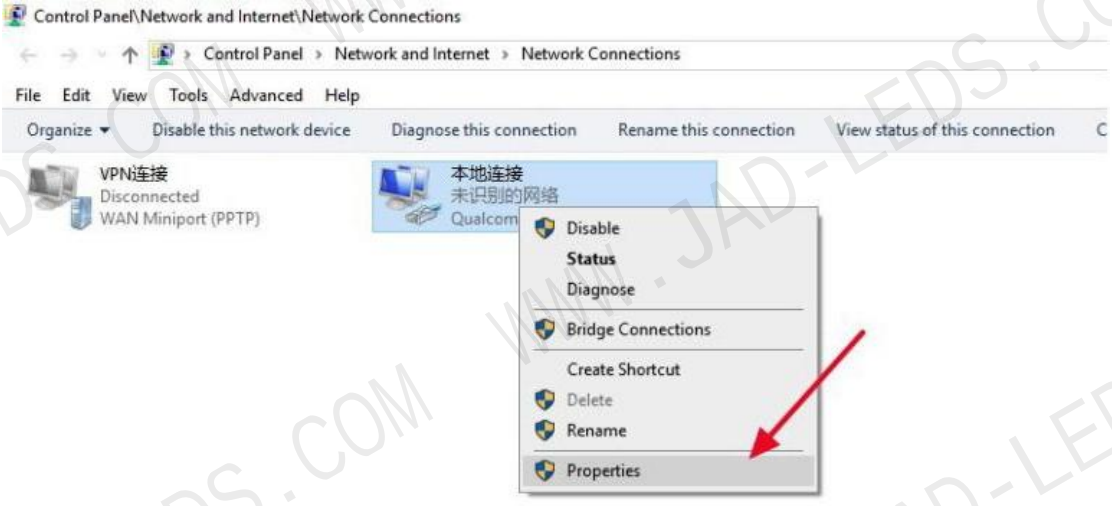
5. Basic Working Procedure for MADRIX

Configurations before MADRIX (if you use other software, these configurations are also essential)

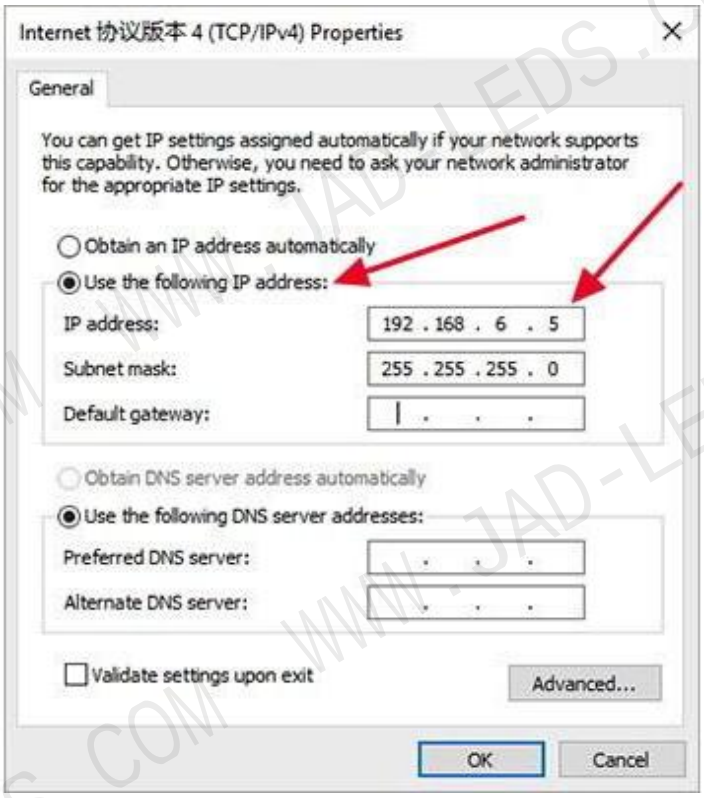
(1). Connect H802RA to PC, allocate an IP address for H802RA.


Control Panel Home
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connections
View your active networks
未识别的网络
Public network
Access type: No network access
Connections: 本地连接
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.

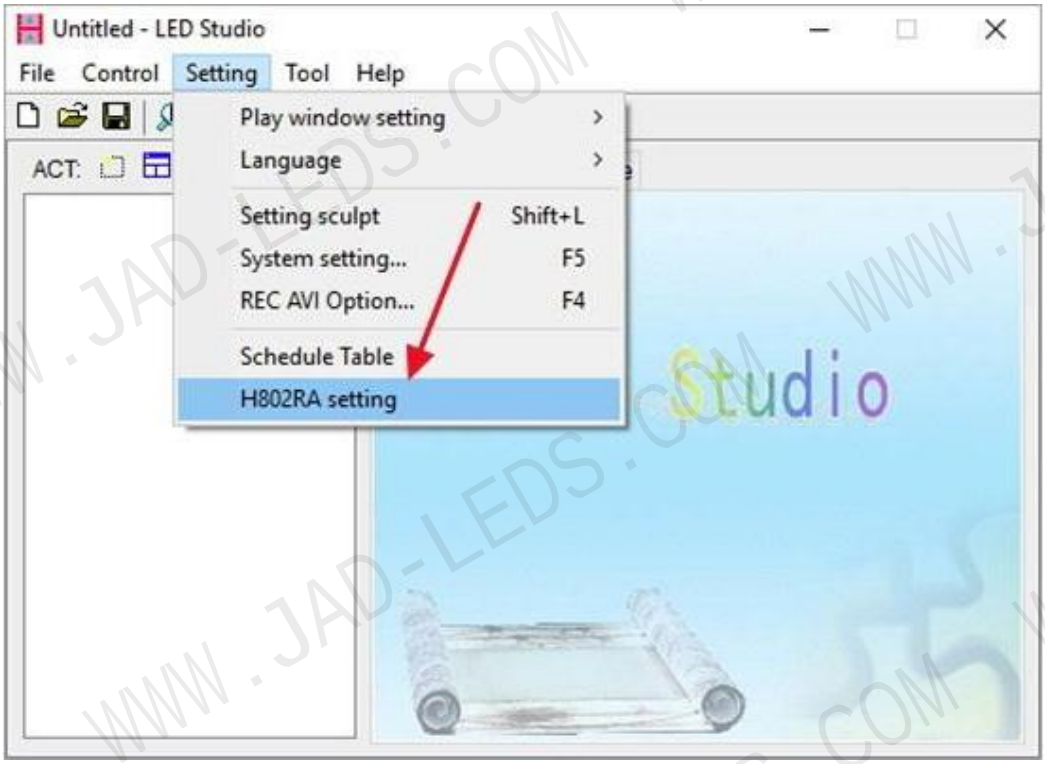
Control Panel\Network and Internet\Network Connections
Control Panel › Network and Internet › Network Connections
File Edit View Tools Advanced Help
Organize
VPN连接
Disconnected
WAN Miniport (PPTP)
本地连接
未识别的网络
Qualcomm Atheros AR8151 PCI-E...

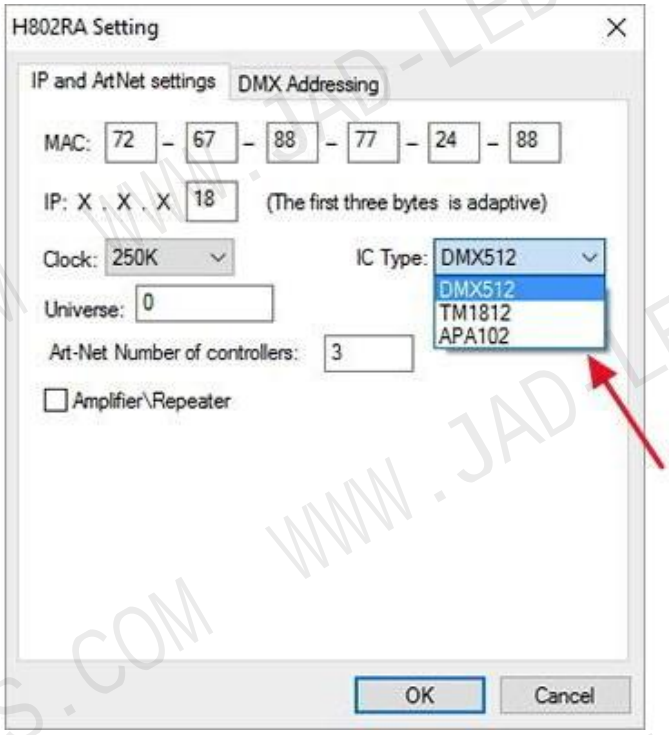

Control Panel\Network and Internet\Network Connections
Control Panel › Network and Internet › Network Connections
File Edit View Tools Advanced Help
Organize
Disable this network device
Diagnose this connection
Rename this connection
View status of this connection
VPN连接
Disconnected
WAN Miniport (PPTP)
本地连接
未识别的网络
Disable
Status
Diagnose
Bridge Connections
Create Shortcut
Delete
Rename
Properties

本地连接 Properties
Networking
Connect using:
Qualcomm Atheros AR8151 PCI-E Gigabit Ethernet Contrc
Configure...
This connection uses the following items:
QoS 数据包计划程序
Internet 协议版本 6 (TCP/IPv6)
链路层拓扑发现映射器 I/O 驱动程序
Microsoft 网络适配器多路传送器协议
Internet 协议版本 4 (TCP/IPv4)
Microsoft LLDP 协议驱动程序
链路层拓扑发现响应程序
1
2
Install...
Uninstall
Properties
Description
传输控制协议/Internet 协议。该协议是默认的广域网络协议，用于在不同的相互连接的网络上通信。
OK
Cancel


Internet 协议版本 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 6 . 5
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

(2). Open LED Studio, click “setting” -- “H802RA setting”, pops up the following dialog box.



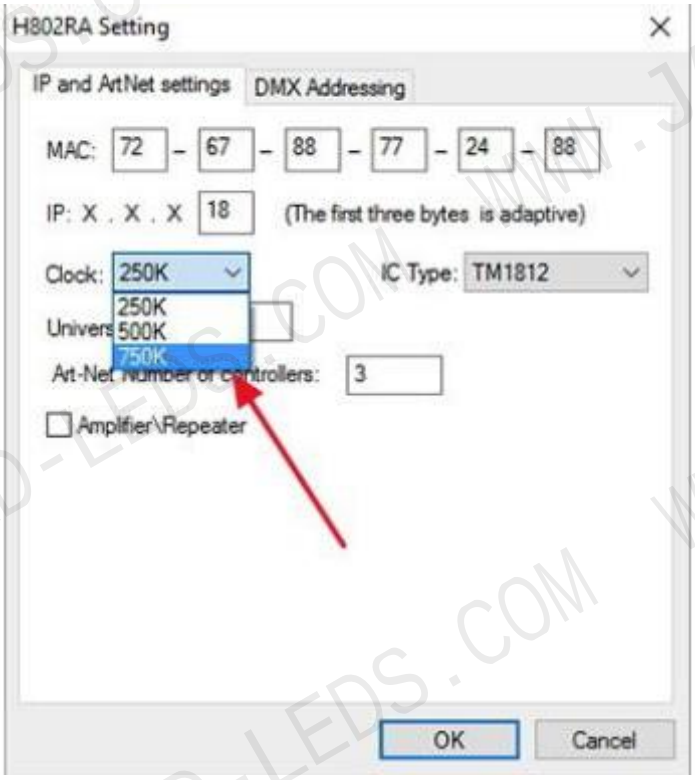


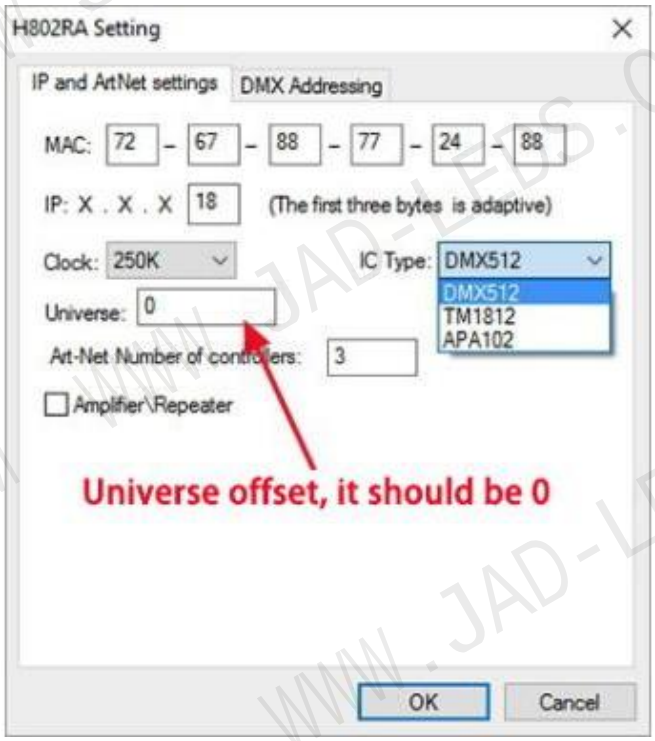
Note:

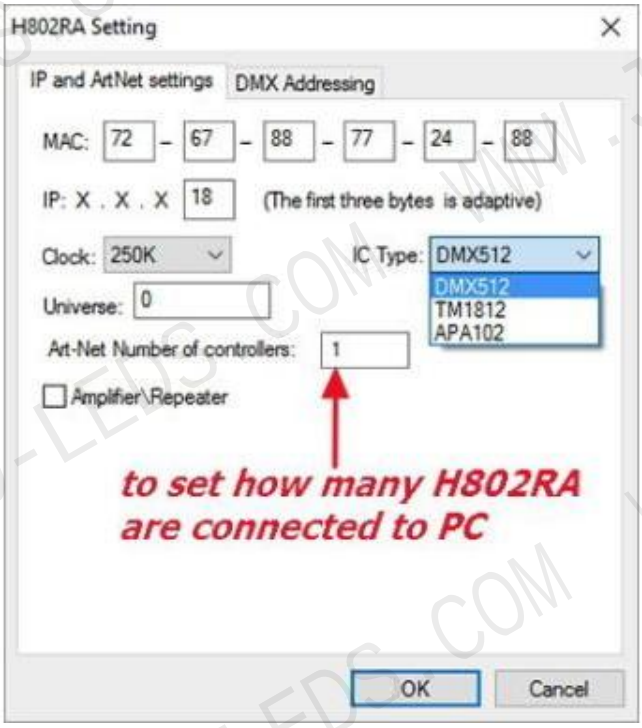
(1). "DMX512" includes UCS512, WS2821, TM512.

(2). "TM1812" includes P9883, TM1804, TM1809, UCS1903, UCS1909, UCS1912, WS2811, WS2812, SM16703, SM16709, SM16712, INK1003, LX1003.

Normally, if you choose "DMX512", Clock should be 250K, if you choose "TM1812", clock should be "750K".

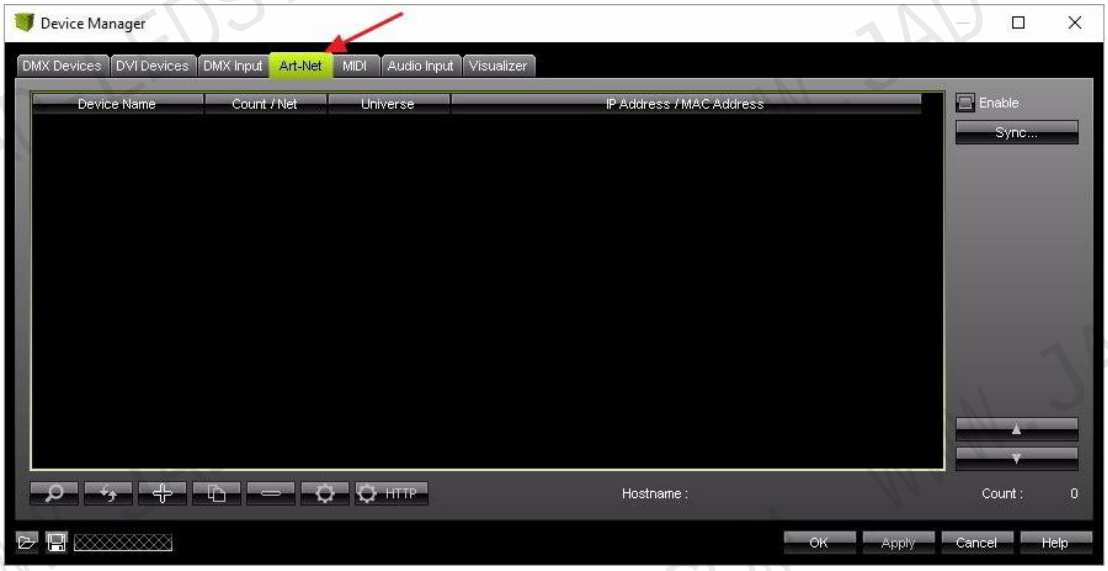

H802RA Setting
IP and ArtNet settings
DMX Addressing
MAC: 72 - 67 - 88 - 77 - 24 - 88
IP: X . X . X 18
(The first three bytes is adaptive)
Clock: 250K
IC Type: TM1812
250K
500K
750K
Art-Net Number of controllers: 3
Amplifier\Repeater
OK
Cancel

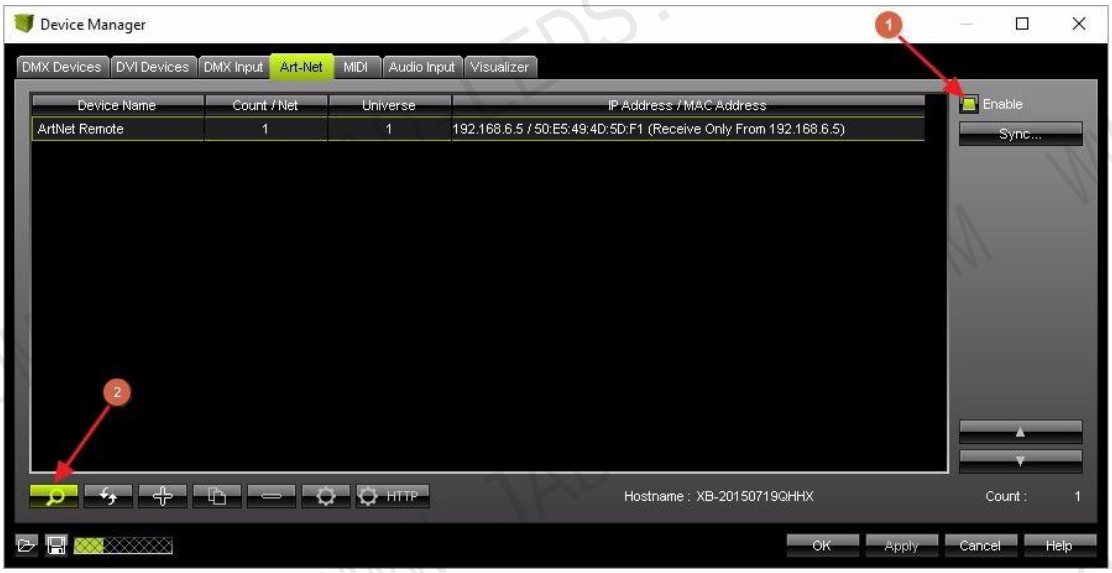

H802RA Setting
IP and ArtNet settings
DMX Addressing
MAC: 72 - 67 - 88 - 77 - 24 - 88
IP: X . X . X 18
(The first three bytes is adaptive)
Clock: 250K
IC Type: DMX512
DMX512
TM1812
APA102
Universe: 0
Art-Net Number of controllers: 3
Amplifier\Repeater
Universe offset, it should be 0
OK
Cancel

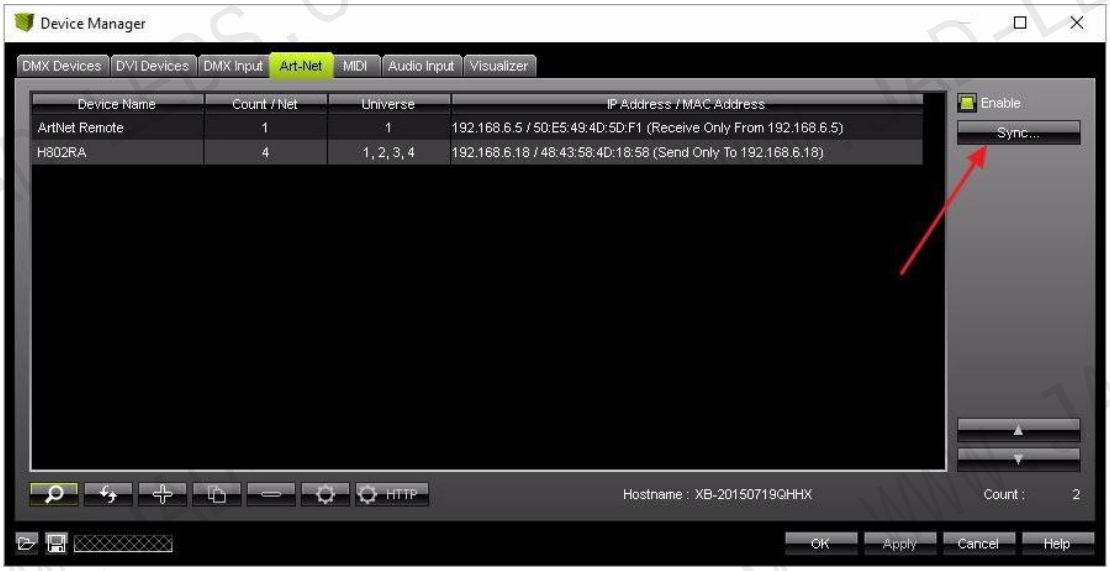


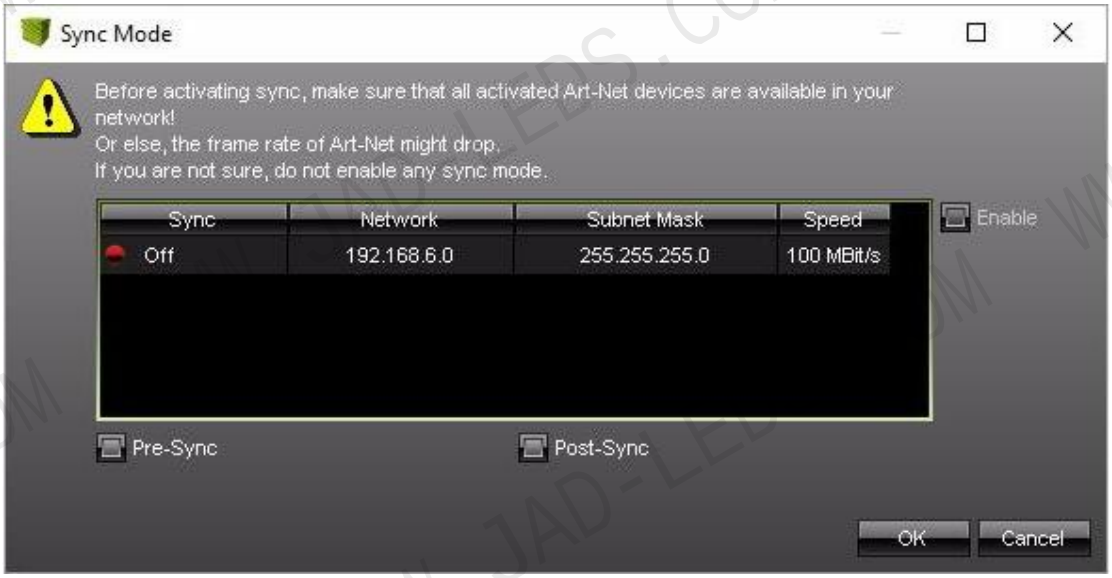
MADRIX Configurations

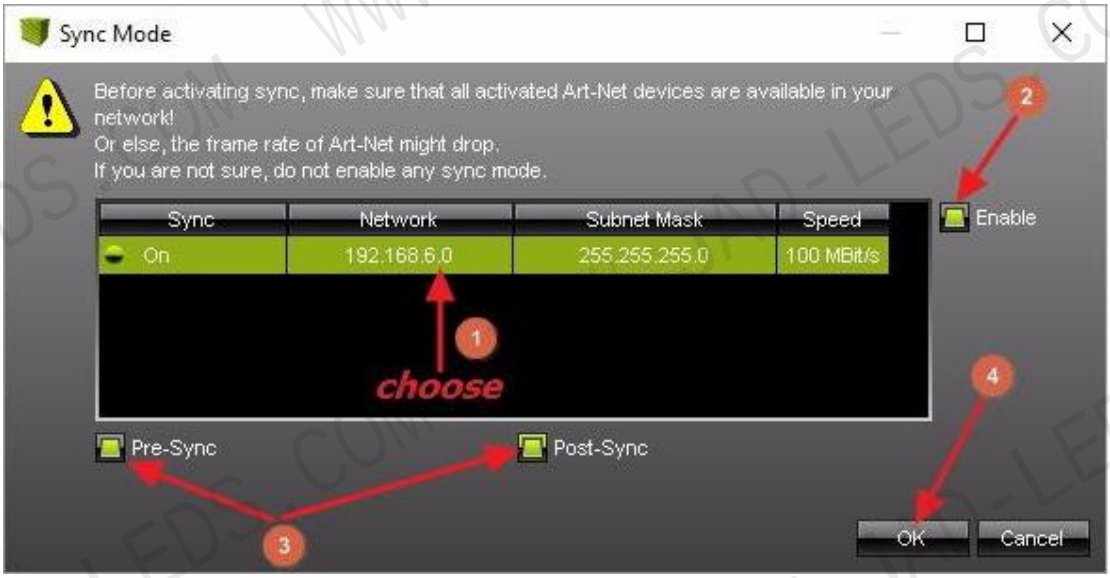
Assume you connect one H802RA to PC, each universe controls 170 WS2812 pixels (1 pixel includes R,G,B, 512/3=170)


Device Manager
DMX Devices
DVI Devices
DMX Input
Art-Net
MIDI
Audio Input
Visualizer
Device Name
Count / Net
Universe
IP Address / MAC Address
Enable
Sync...
HTTP
Hostname :
Count : 0
OK
Apply
Cancel
Help

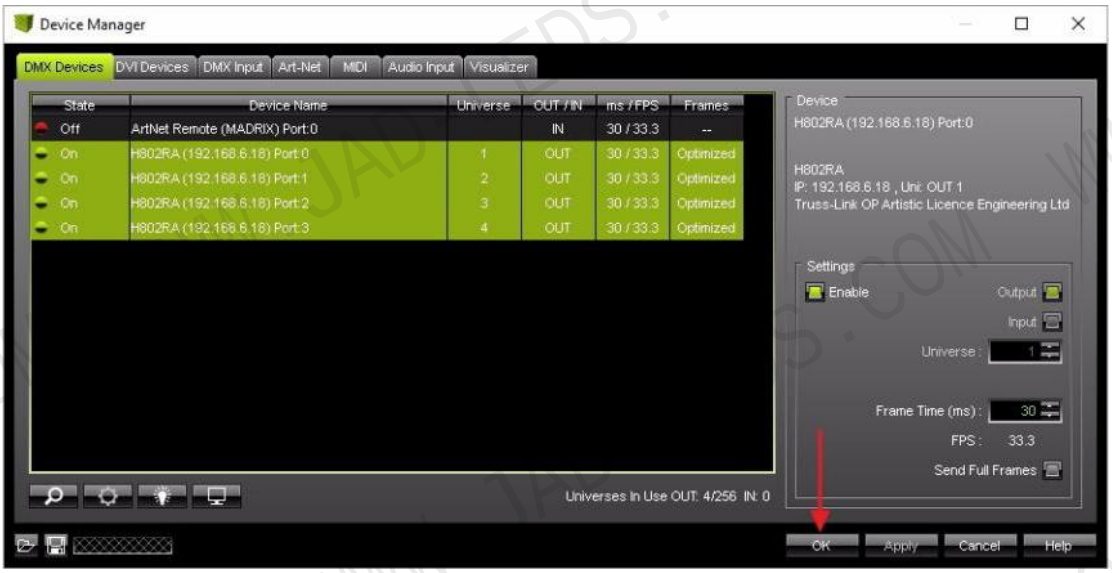

Device Manager
1
DMX Devices
DVI Devices
DMX Input
Art-Net
MIDI
Audio Input
Visualizer
Device Name
Count / Net
Universe
IP Address / MAC Address
ArtNet Remote
1
1
192.168.6.5 / 50:E5:49:4D:5D:F1 (Receive Only From 192.168.6.5)
Enable
Sync...
2
HTTP
Hostname : XB-20150719QHHX
Count : 1
OK
Apply
Cancel
Help


Device Manager
DMX Devices
DVI Devices
DMX Input
Art-Net
MIDI
Audio Input
Visualizer
Device Name
Count / Net
Universe
IP Address / MAC Address
ArtNet Remote
1
1
192.168.6.5 / 50:E5:49:4D:5D:F1 (Receive Only From 192.168.6.5)
H802RA
4
1, 2, 3, 4
192.168.6.18 / 48:43:58:4D:18:58 (Send Only To 192.168.6.18)
Enable
Sync...
HTTP
Hostname : XB-20150719QHHX
Count : 2
OK
Apply
Cancel
Help

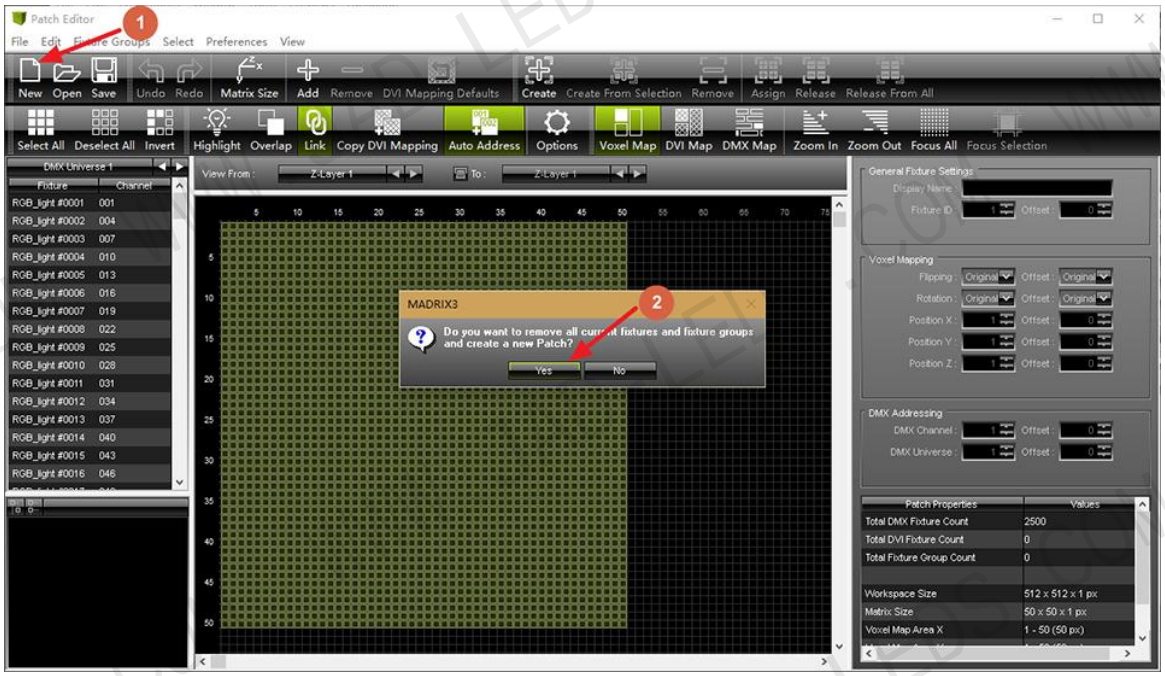

Sync Mode
Before activating sync, make sure that all activated Art-Net devices are available in your network!
Or else, the frame rate of Art-Net might drop.
If you are not sure, do not enable any sync mode.
Sync
Network
Subnet Mask
Speed
Off
192.168.6.0
255.255.255.0
100 MBit/s
Enable
Pre-Sync
Post-Sync
OK
Cancel

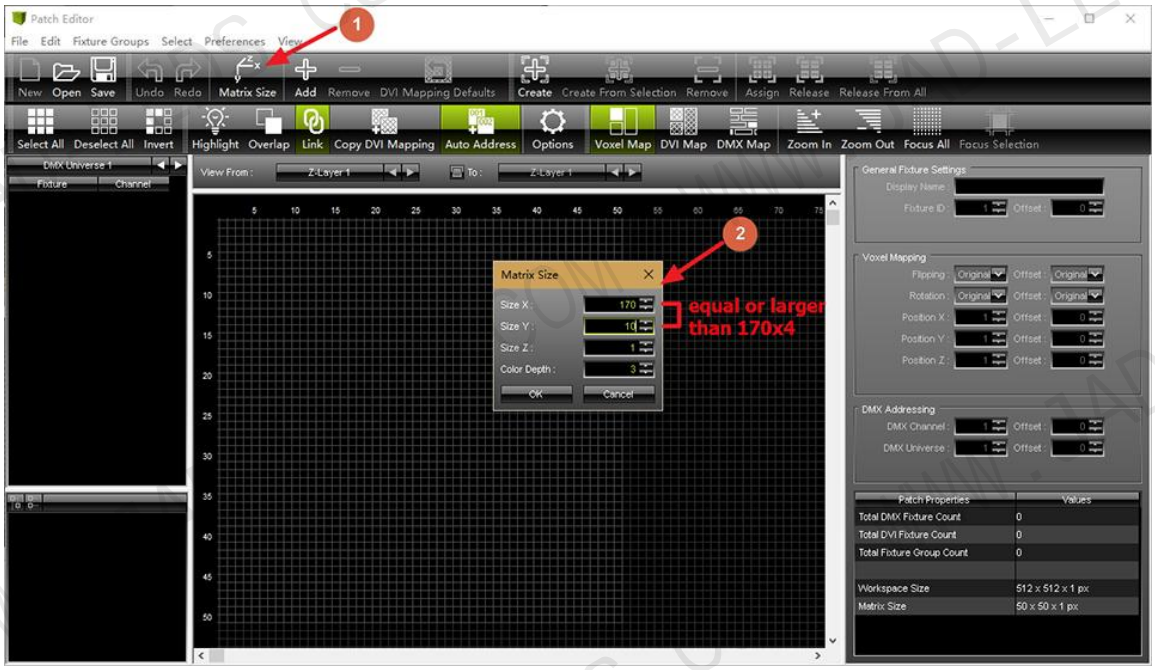

Sync Mode
Before activating sync, make sure that all activated Art-Net devices are available in your network!
Or else, the frame rate of Art-Net might drop.
If you are not sure, do not enable any sync mode.
Sync
Network
Subnet Mask
Speed
On
192.168.6.0
255.255.255.0
100 MBit/s
Enable
choose
1
2
3
4
Pre-Sync
Post-Sync
OK
Cancel

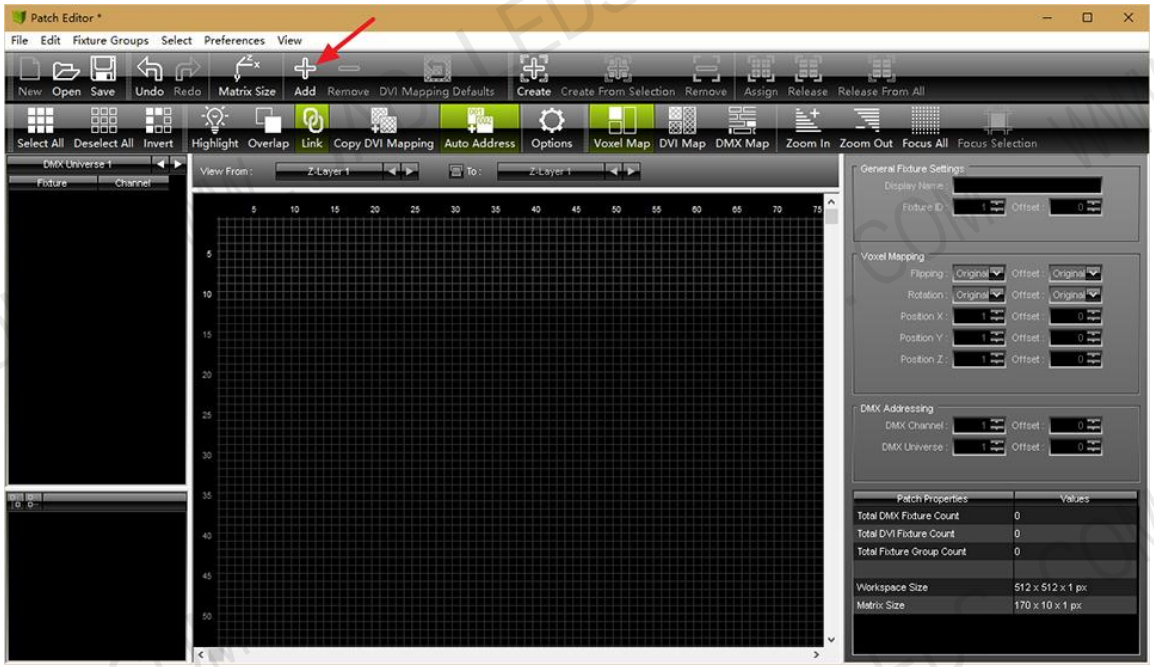
Device Manager
DMX Devices
DVI Devices
DMX Input
Art-Net
MIDI
Audio Input
Visualizer
State
Device Name
Universe
OUT / IN
ms / FPS
Frames
Off
ArtNet Remote (MADRIX) Port:0
IN
30 / 33.3
--
Off
H802RA (192.168.6.18) Port:0
1
OUT
30 / 33.3
Optimized
Off
H802RA (192.168.6.18) Port:1
2
OUT
30 / 33.3
Optimized
Off
H802RA (192.168.6.18) Port:2
3
OUT
30 / 33.3
Optimized
Off
H802RA (192.168.6.18) Port:3
4
OUT
30 / 33.3
Optimized
1
select them all
2
Device
H802RA (192.168.6.18) Port:0
H802RA
IP: 192.168.6.18 , Uni: OUT 1
Truss-Link OP Artistic Licence Engineering Ltd
Settings
Enable
Output
Input
Universe :
1
Frame Time (ms) :
30
FPS :
33.3
Send Full Frames
3
Universes In Use OUT: 0/256 IN: 0
OK
Apply
Cancel
Help


Device Manager
DMX Devices
DVI Devices
DMX Input
Art-Net
MIDI
Audio Input
Visualizer
State
Device Name
Universe
OUT / IN
ms / FPS
Frames
Off
ArtNet Remote (MADRIX) Port:0
IN
30 / 33.3
--
On
H802RA (192.168.6.18) Port:0
1
OUT
30 / 33.3
Optimized
On
H802RA (192.168.6.18) Port:1
2
OUT
30 / 33.3
Optimized
On
H802RA (192.168.6.18) Port:2
3
OUT
30 / 33.3
Optimized
On
H802RA (192.168.6.18) Port:3
4
OUT
30 / 33.3
Optimized
Device
H802RA (192.168.6.18) Port:0
H802RA
IP: 192.168.6.18 , Uni: OUT 1
Truss-Link OP Artistic Licence Engineering Ltd
Settings
Enable
Output
Input
Universe :
1
Frame Time (ms) :
30
FPS :
33.3
Send Full Frames
Universes In Use OUT: 4/256 IN: 0
OK
Apply
Cancel
Help

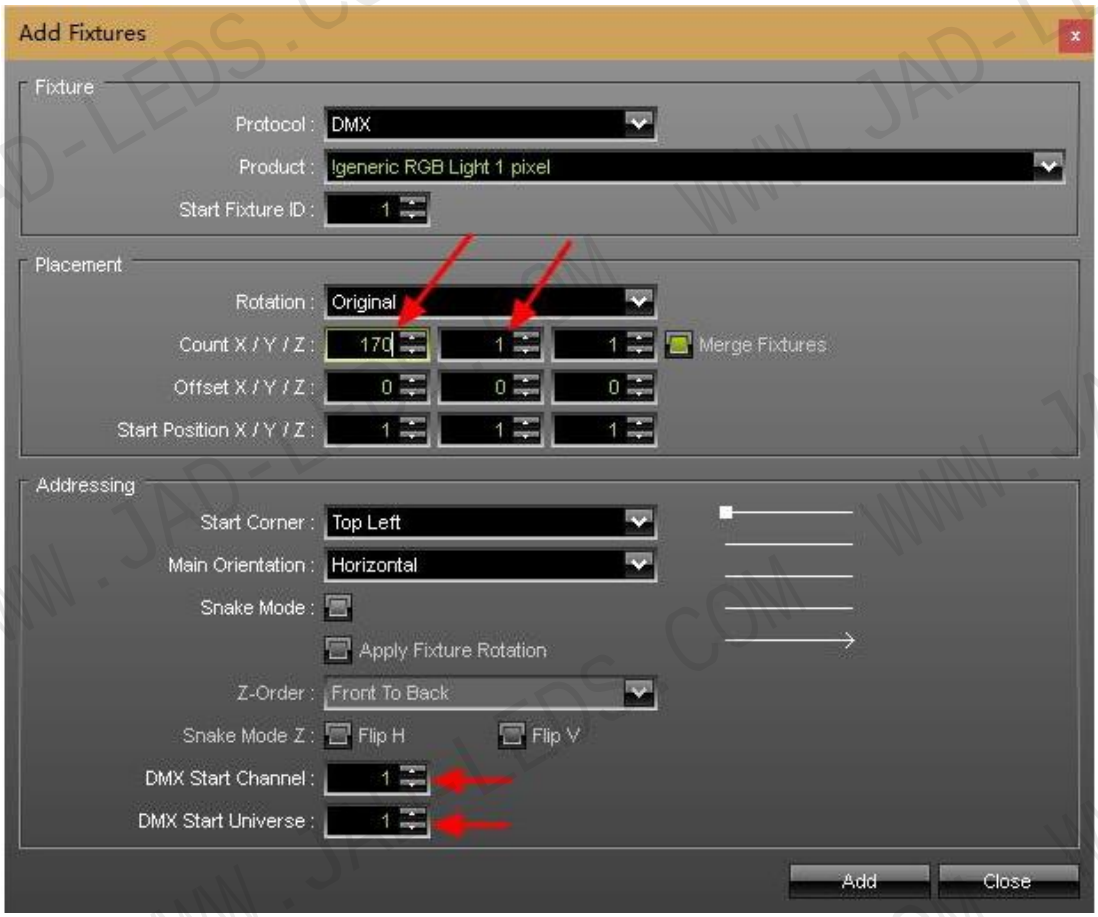
MADRIX
File Edit Preferences Window Tools Previews Language Help
Matrix Generator... F2
Patch Editor... F3
Device Manager... F4
Audio Performance... Ctrl+Alt+A
Remote Control
Backup System...
Options... Ctrl+Alt+O
MADRIX
MUSIC MAKES THE LIGHT
! NO MADRIX 3 KEY !
! NO MADRIX 3 KEY !
Programmer
Cue List
Blackout
Audio
Layer


Patch Editor
File Edit Fixture Groups Select Preferences View
1
New Open Save Undo Redo Matrix Size Add Remove DVI Mapping Defaults Create Create From Selection Remove Assign Release Release From All
Select All Deselect All Invert Highlight Overlap Link Copy DVI Mapping Auto Address Options Voxel Map DVI Map DMX Map Zoom In Zoom Out Focus All Focus Selection
DMX Universe 1
Fixture Channel
RGB_light #0001 001
RGB_light #0002 004
RGB_light #0003 007
RGB_light #0004 010
RGB_light #0005 013
RGB_light #0006 016
RGB_light #0007 019
RGB_light #0008 022
RGB_light #0009 025
RGB_light #0010 028
RGB_light #0011 031
RGB_light #0012 034
RGB_light #0013 037
RGB_light #0014 040
RGB_light #0015 043
RGB_light #0016 046
View From : Z-Layer 1 To : Z-Layer 1
MADRIX3
2
Do you want to remove all current fixtures and fixture groups and create a new Patch?
Yes No
General Fixture Settings
Display Name
Fixture ID Offset
Voxel Mapping
Flipping Offset
Rotation Offset
Position X Offset
Position Y Offset
Position Z Offset
DMX Addressing
DMX Channel Offset
DMX Universe Offset
Patch Properties Values
Total DMX Fixture Count 2500
Total DVI Fixture Count 0
Total Fixture Group Count 0
Workspace Size 512 x 512 x 1 px
Matrix Size 50 x 50 x 1 px
Voxel Map Area X 1 - 50 (50 px)

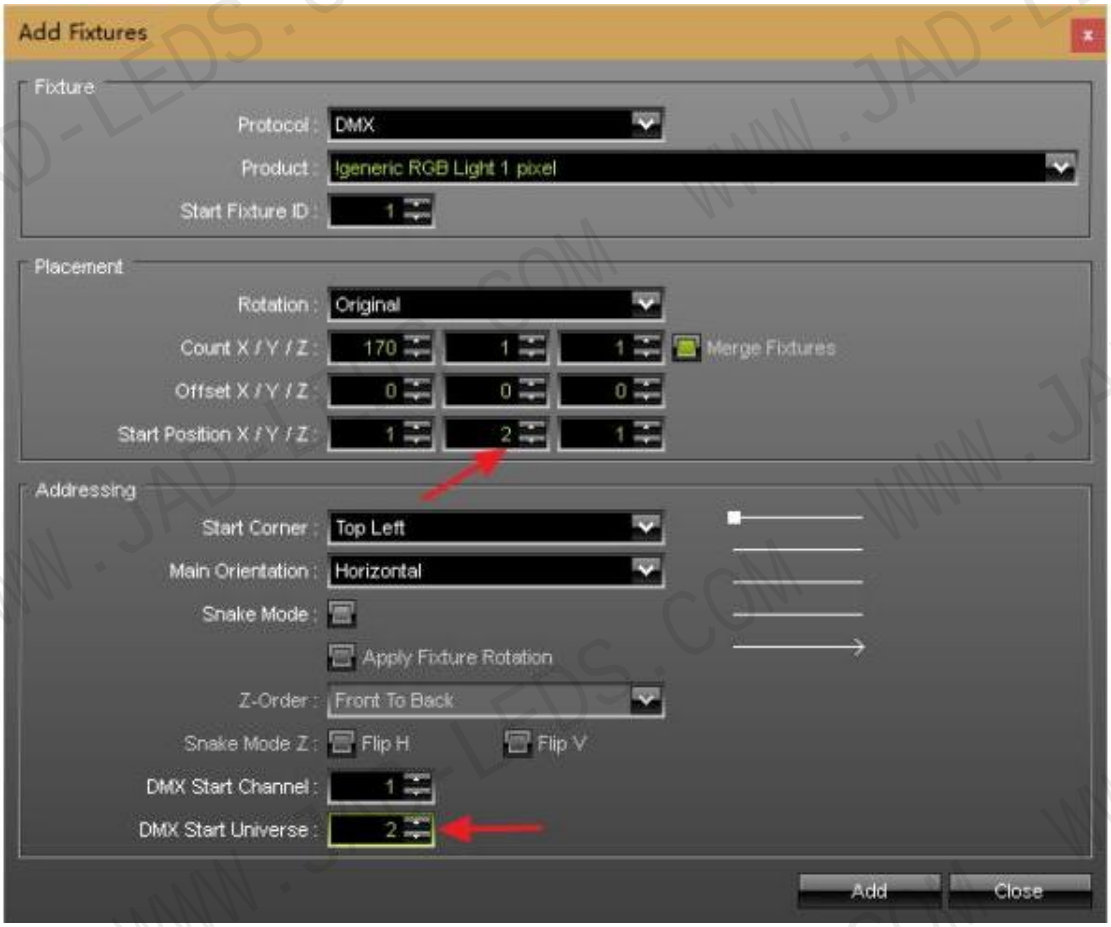




Add Fixtures to universe 1



Add Fixtures to universe 2

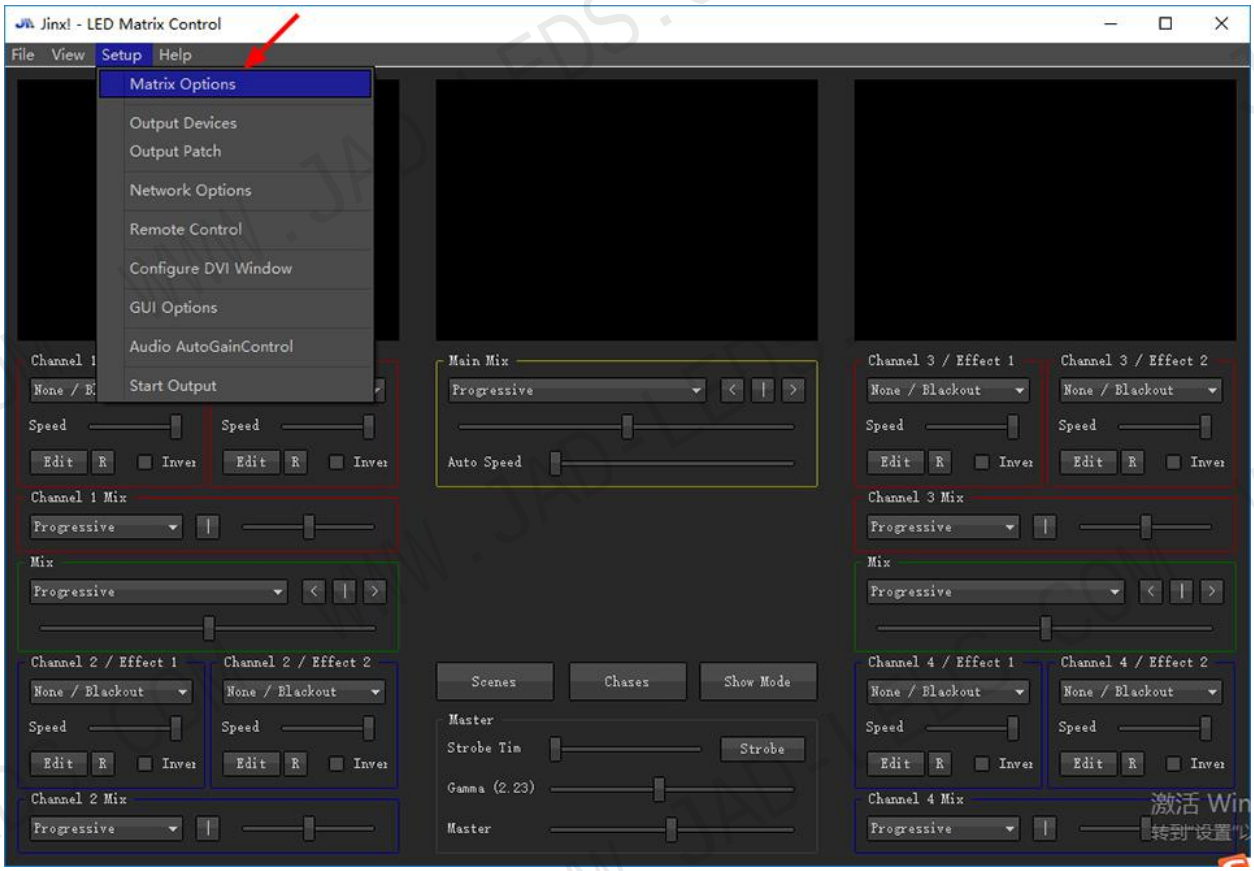


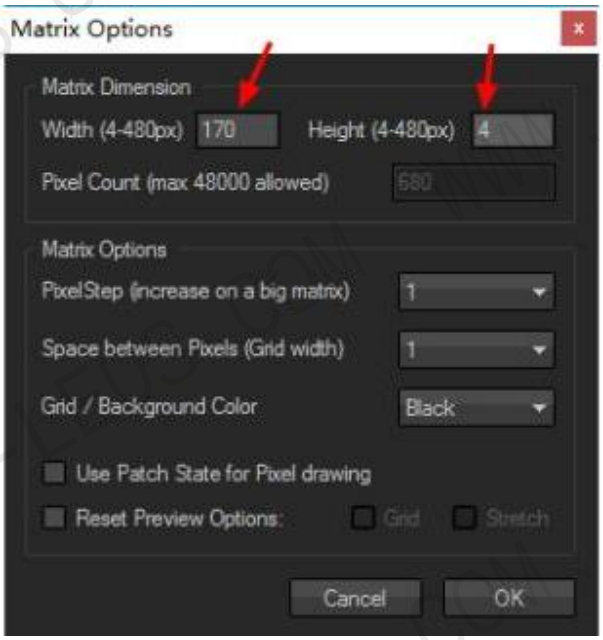
Use the same way to add fixtures for the rest of two universes

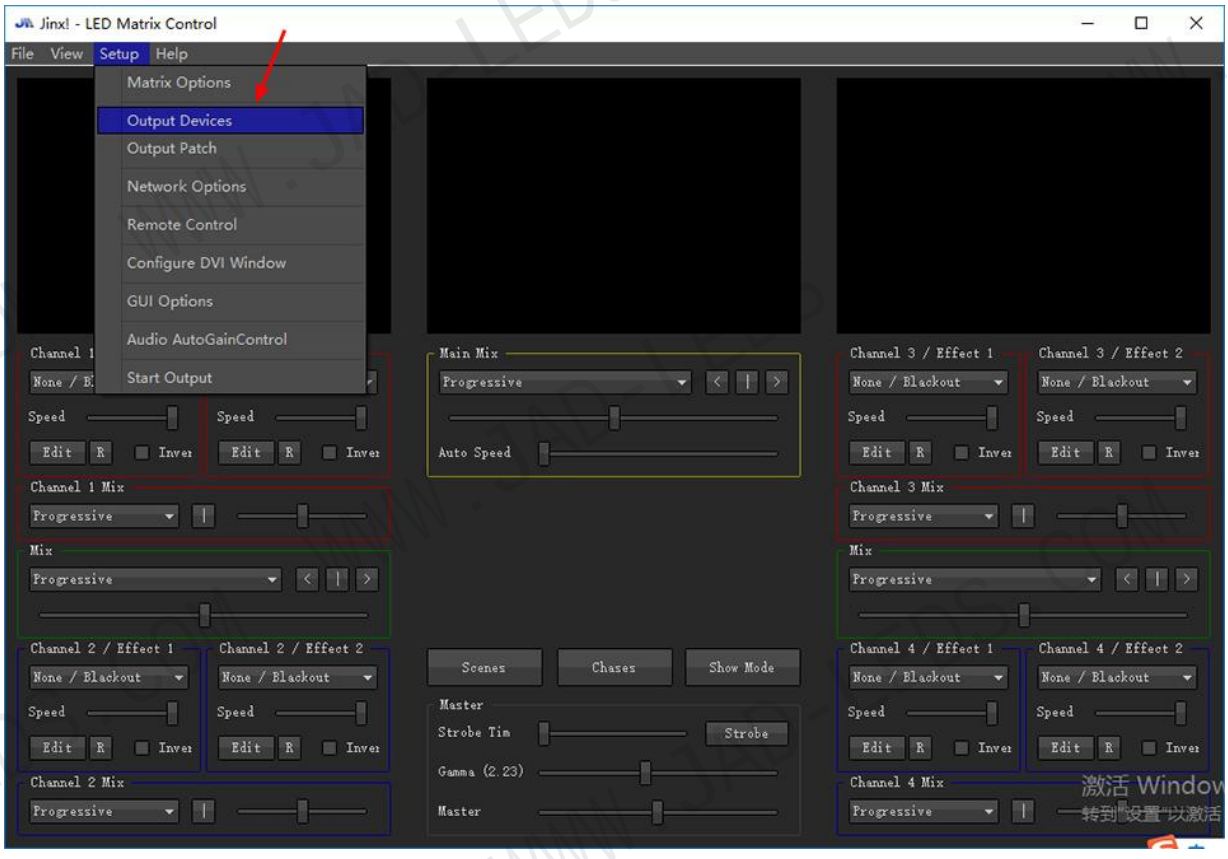
Save patch, then go back to main window, you can control lights with MADRIX!!!

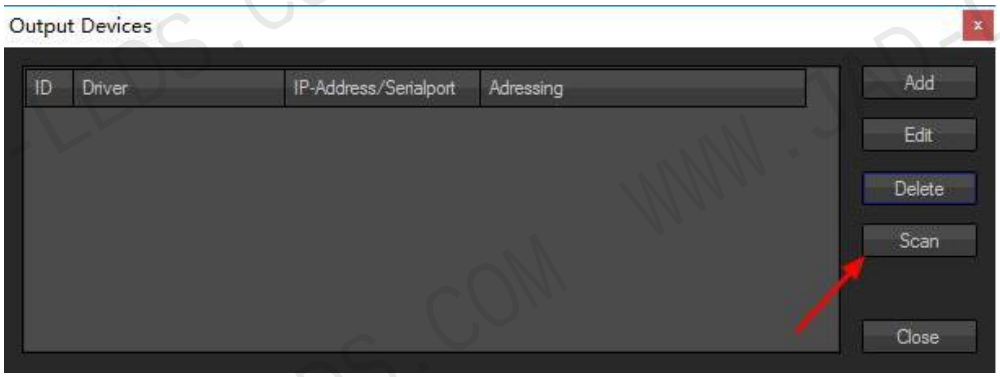
6. Basic Working Procedure for Jinx!

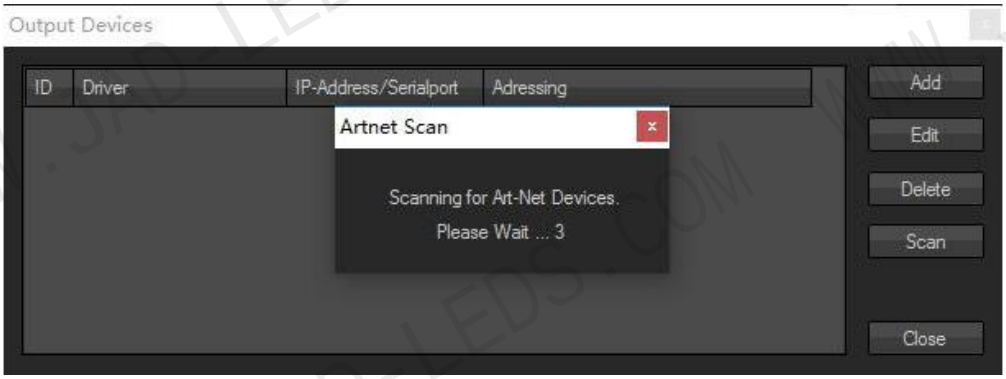
Note: before this, you should allocate an IP address for H802RA and configure H802RA in LED Studio, which has been showed above.

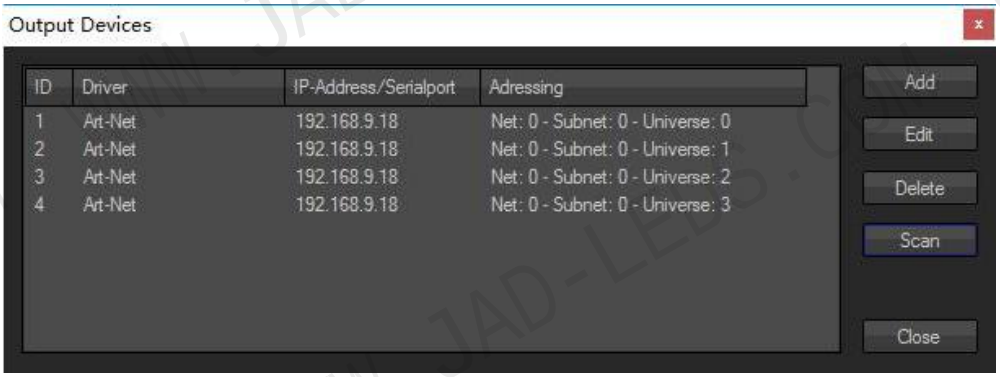



Matrix Options
Matrix Dimension
Width (4-480px)
170
Height (4-480px)
4
Pixel Count (max 48000 allowed)
580
Matrix Options
PixelStep (increase on a big matrix)
1
Space between Pixels (Grid width)
1
Grid / Background Color
Black
Use Patch State for Pixel drawing
Reset Preview Options:
Grid
Stretch
Cancel
OK

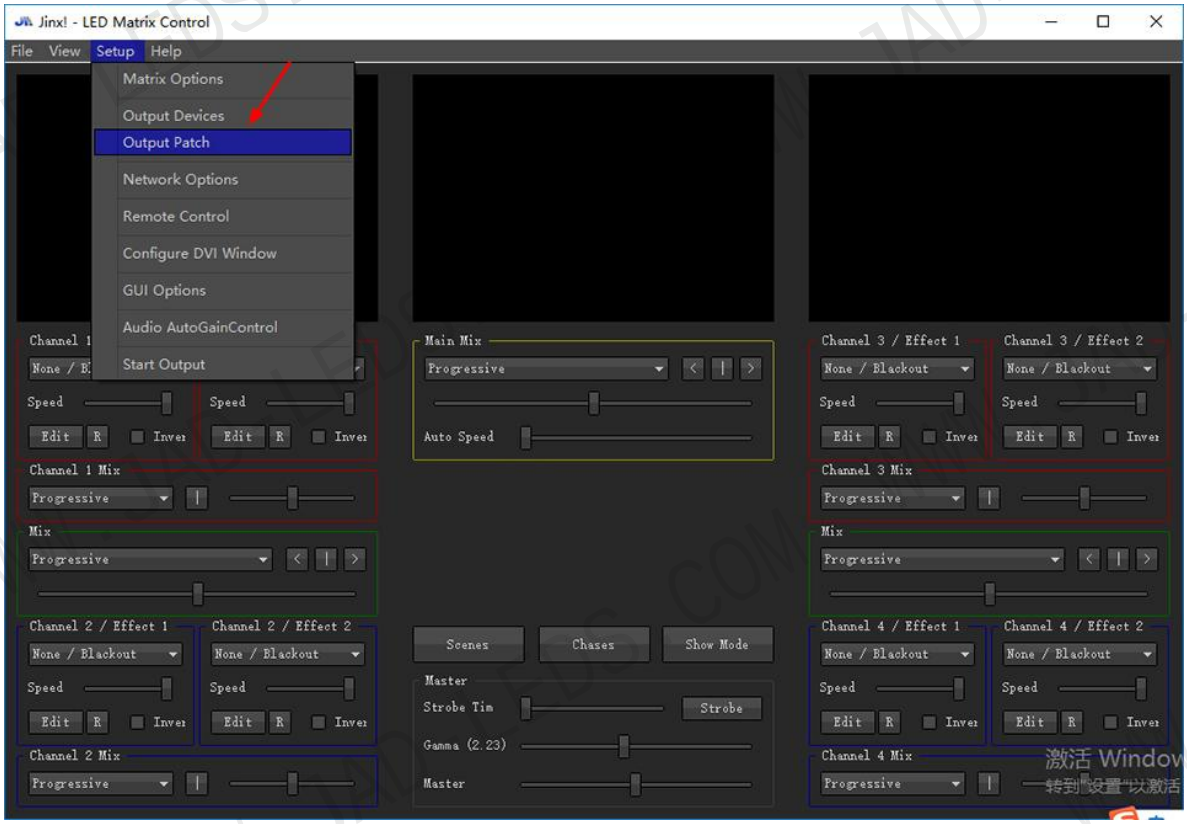

Jinx! - LED Matrix Control
File
View
Setup
Help
Matrix Options
Output Devices
Output Patch
Network Options
Remote Control
Configure DVI Window
GUI Options
Audio AutoGainControl
Start Output
Main Mix
Progressive
Auto Speed
Channel 3 / Effect 1
Channel 3 / Effect 2
None / Blackout
Speed
Edit
R
Inver
Channel 1 Mix
Channel 3 Mix
Mix
Channel 2 / Effect 1
Channel 2 / Effect 2
Channel 4 / Effect 1
Channel 4 / Effect 2
Scenes
Chases
Show Mode
Master
Strobe Tim
Strobe
Gamma (2.23)
Channel 2 Mix
Channel 4 Mix

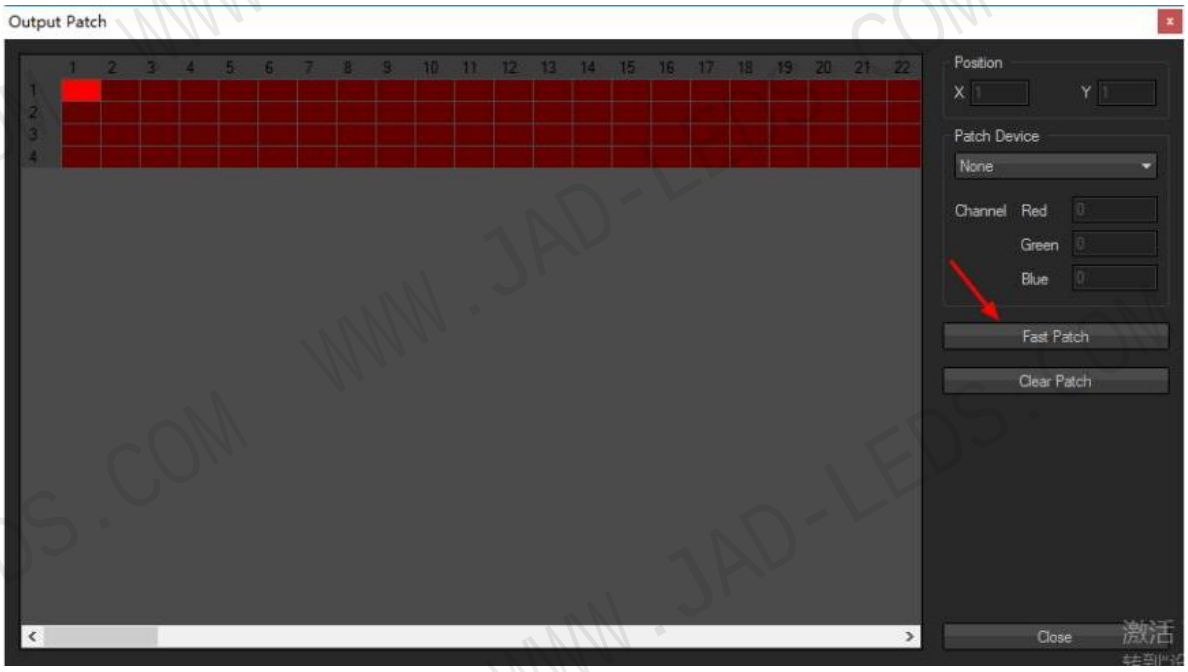


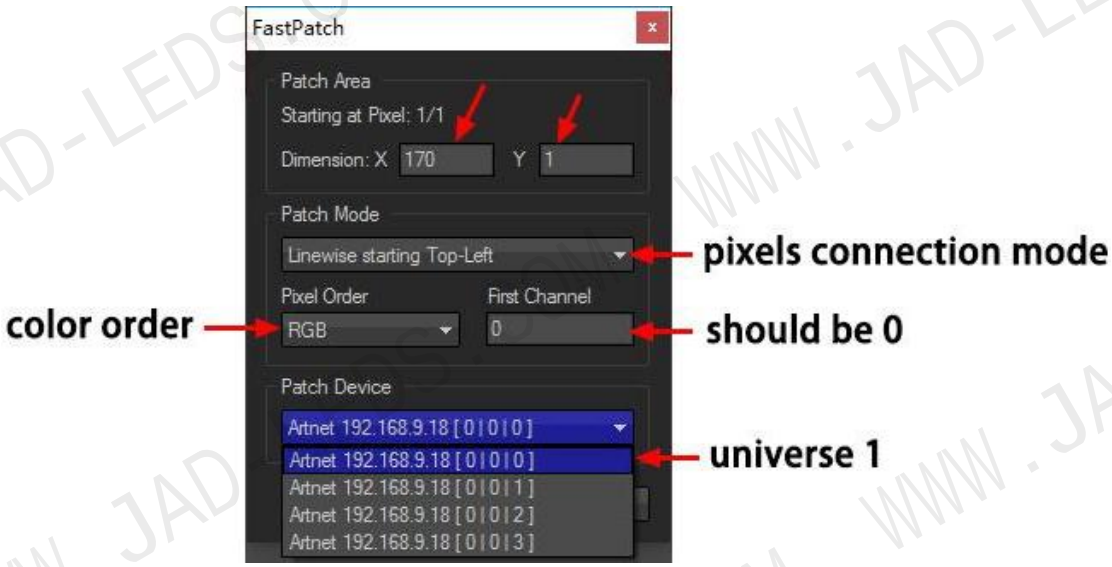


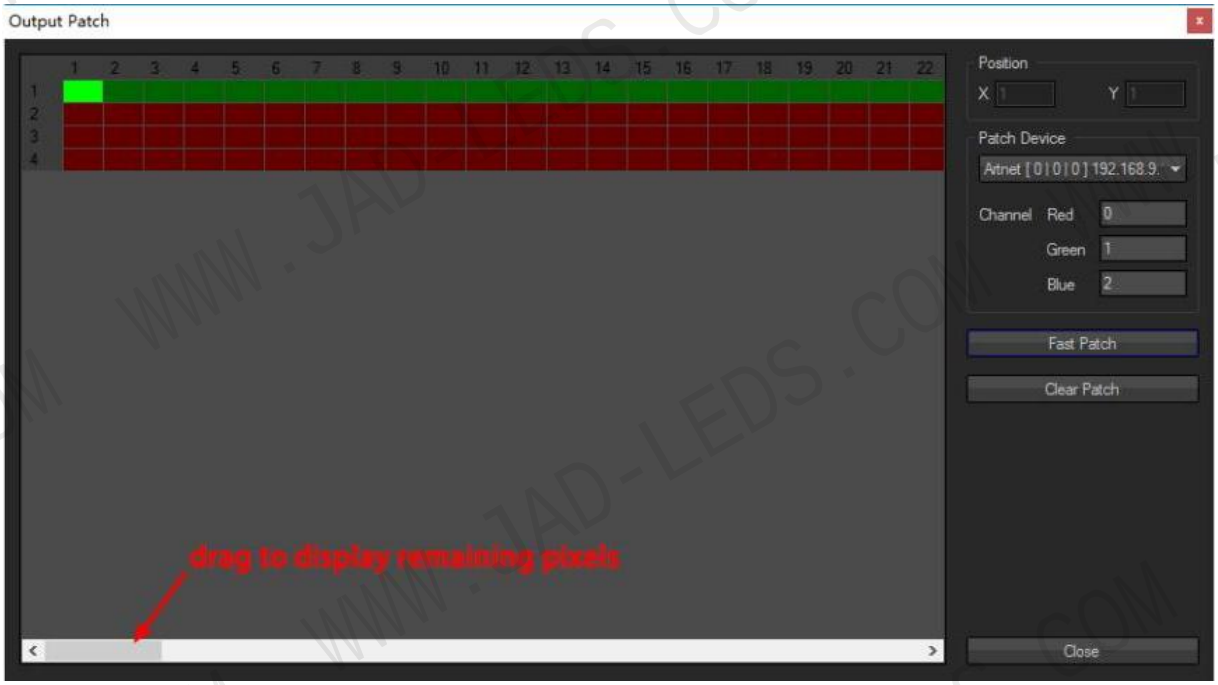


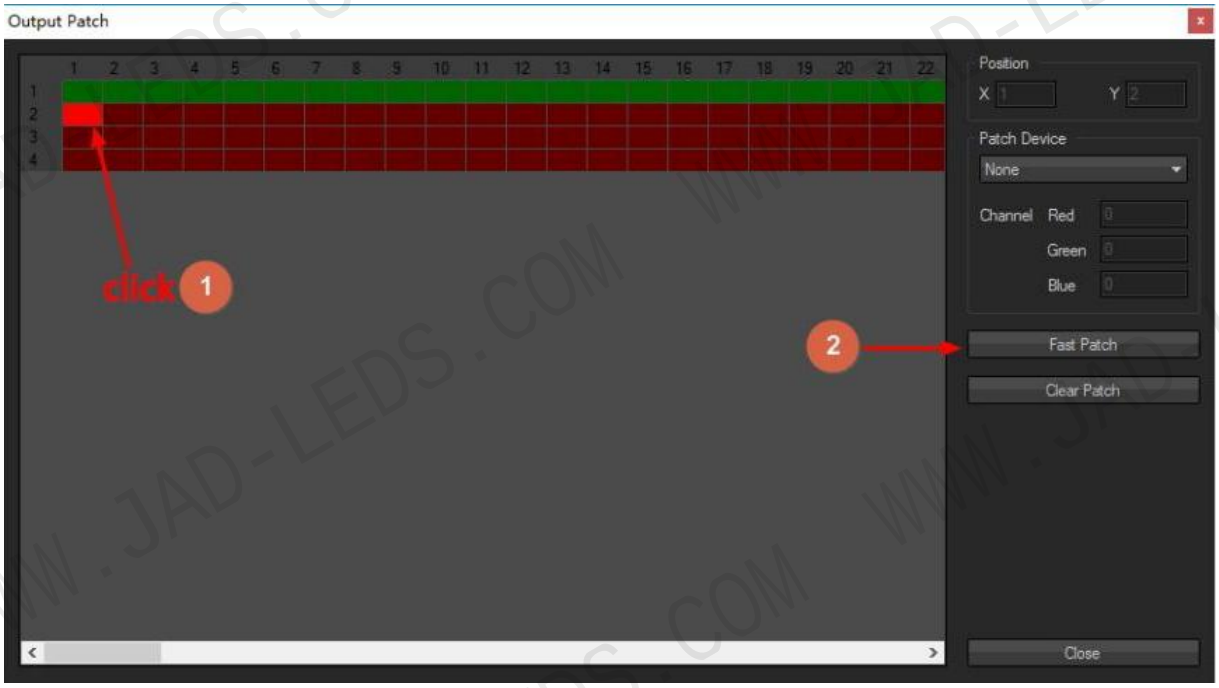
WWW.JAD-LEDS.COM

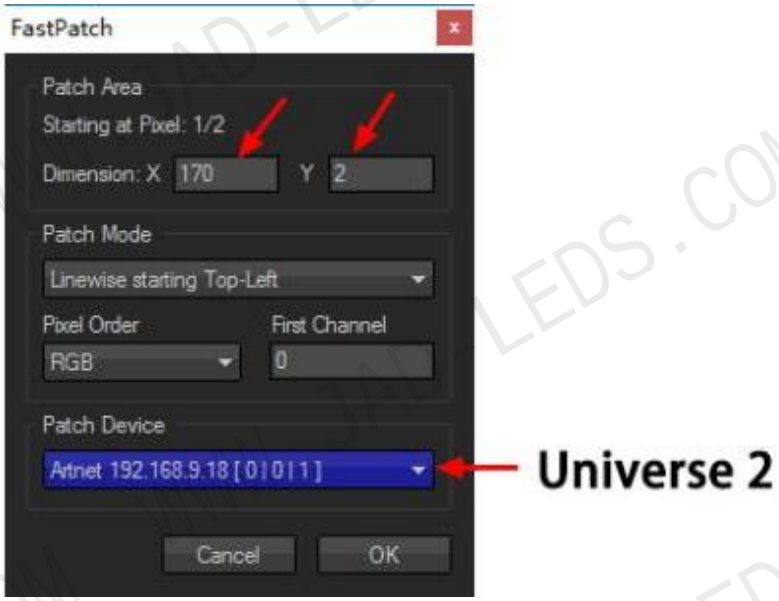

Jinx! - LED Matrix Control
File
View
Setup
Help
Matrix Options
Output Devices
Output Patch
Network Options
Remote Control
Configure DVI Window
GUI Options
Audio AutoGainControl
Start Output
Main Mix
Progressive
Auto Speed
Channel 1 Mix
Channel 2 / Effect 1
Channel 2 / Effect 2
Channel 2 Mix
Channel 3 / Effect 1
Channel 3 / Effect 2
Channel 3 Mix
Channel 4 / Effect 1
Channel 4 / Effect 2
Channel 4 Mix
None / Blackout
Speed
Edit
Mix
Scenes
Chases
Show Mode
Master
Strobe Tim
Strobe
Gamma (2.23)
Master
激活 Window


Output Patch
Position
X
Y
Patch Device
None
Channel
Red
Green
Blue
Fast Patch
Clear Patch
Close
激活

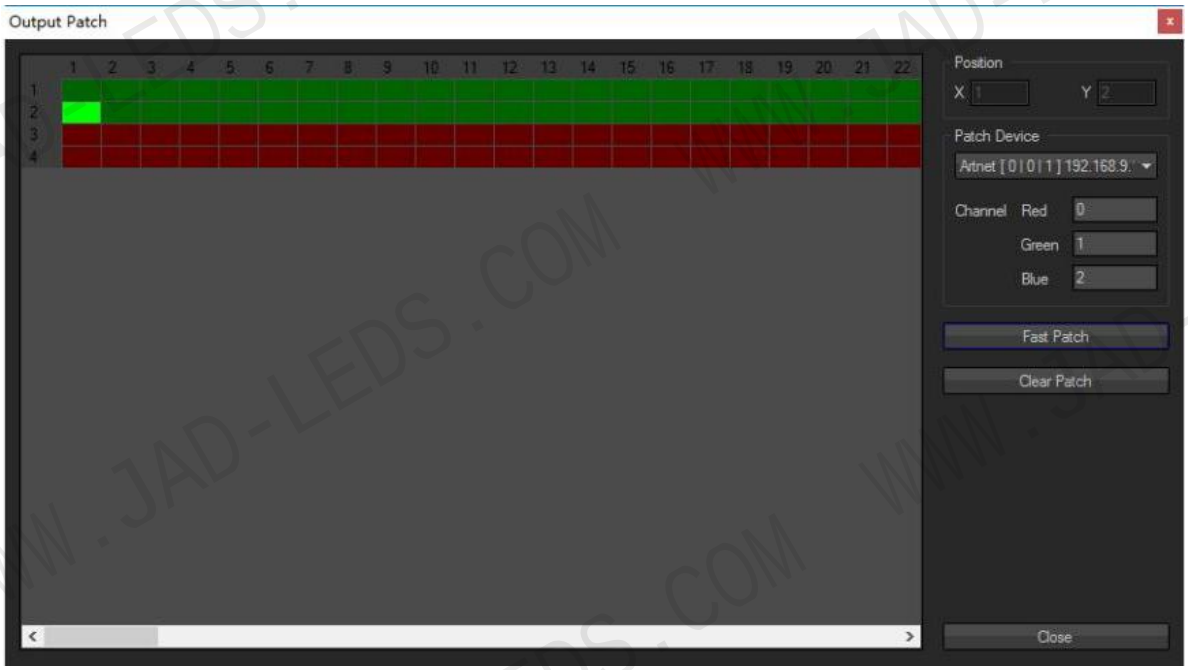

FastPatch
Patch Area
Starting at Pixel: 1/1
Dimension: X 170 Y 1
Patch Mode
Linewise starting Top-Left
pixels connection mode
Pixel Order
First Channel
color order
RGB
0
should be 0
Patch Device
Artnet 192.168.9.18 [0 | 0 | 0]
Artnet 192.168.9.18 [0 | 0 | 0]
Artnet 192.168.9.18 [0 | 0 | 1]
Artnet 192.168.9.18 [0 | 0 | 2]
Artnet 192.168.9.18 [0 | 0 | 3]
universe 1


Output Patch
Position
X 1
Y 1
Patch Device
Artnet [0 | 0 | 0] 192.168.9.
Channel Red 0
Green 1
Blue 2
Fast Patch
Clear Patch
drag to display remaining pixels
Close

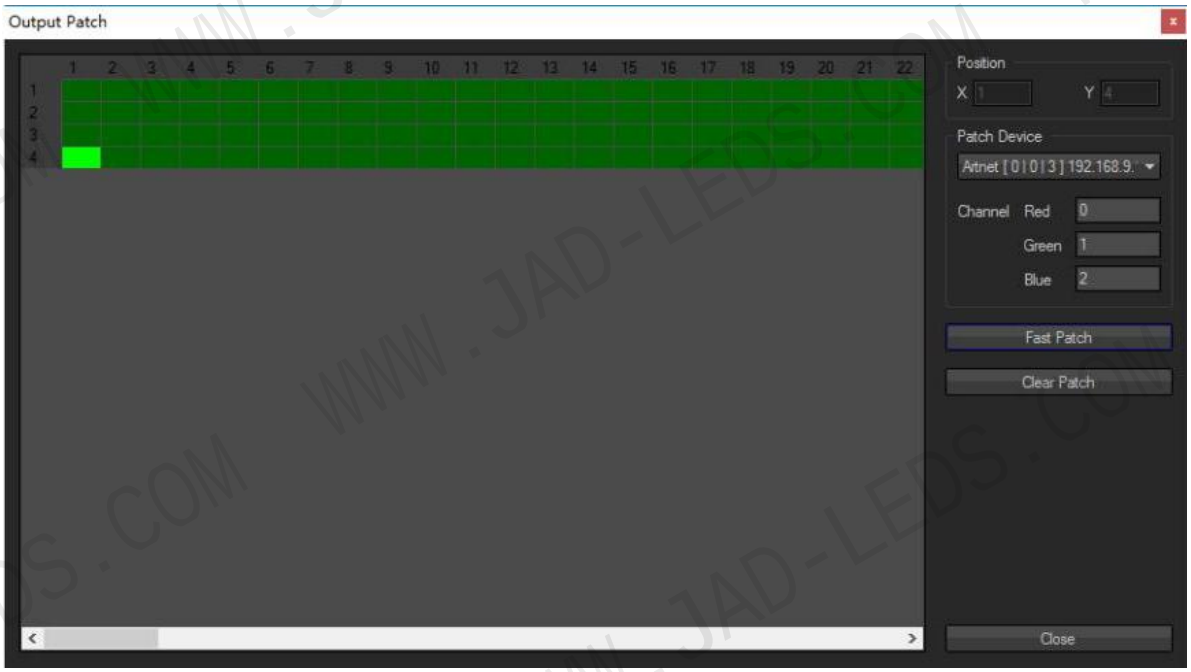




WWW.JAD-LEDS.COM

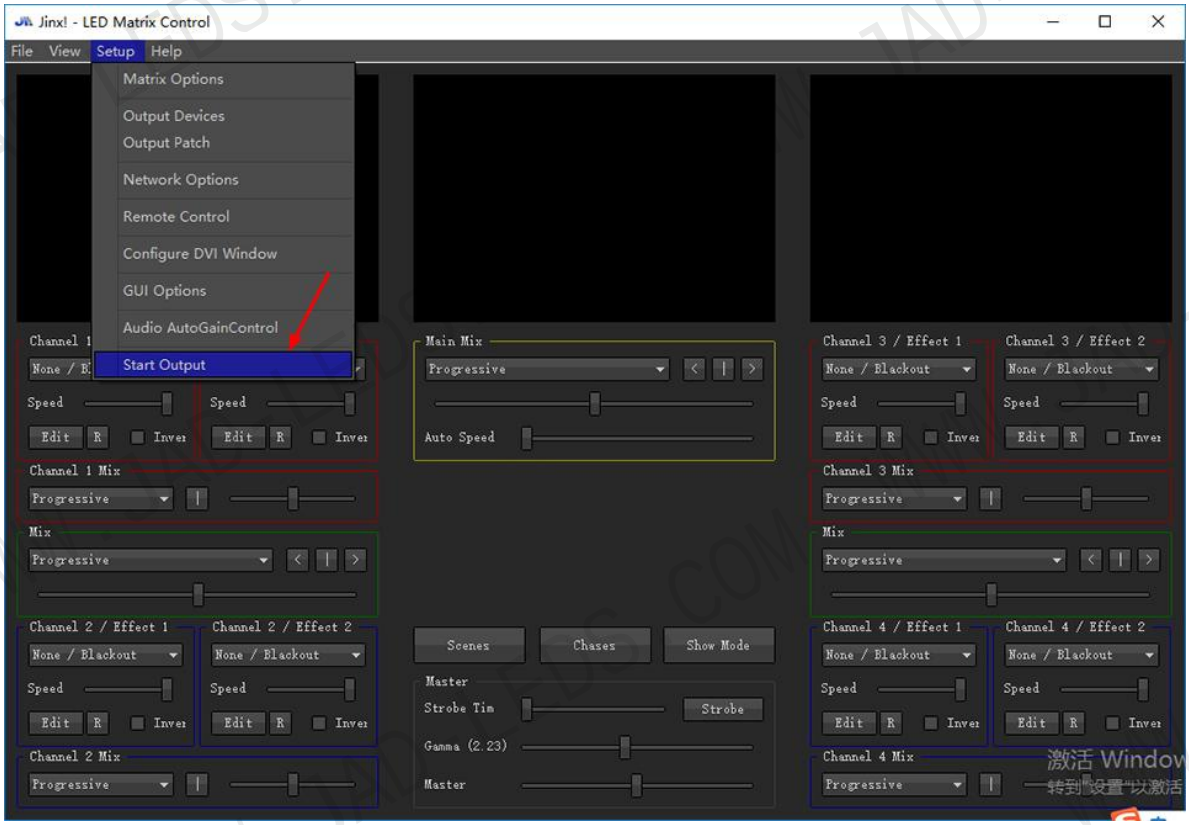


Use the same way to add pixels to the rest of two universes

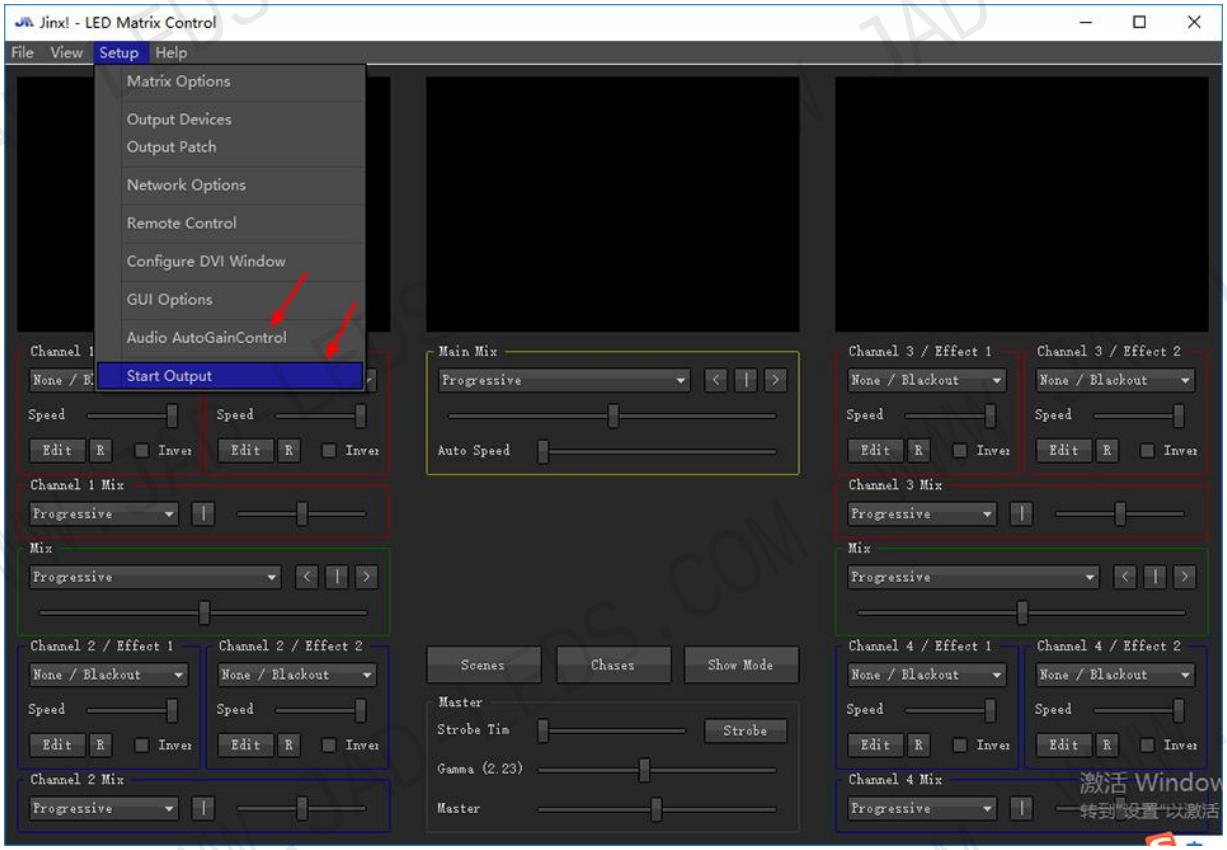


Then

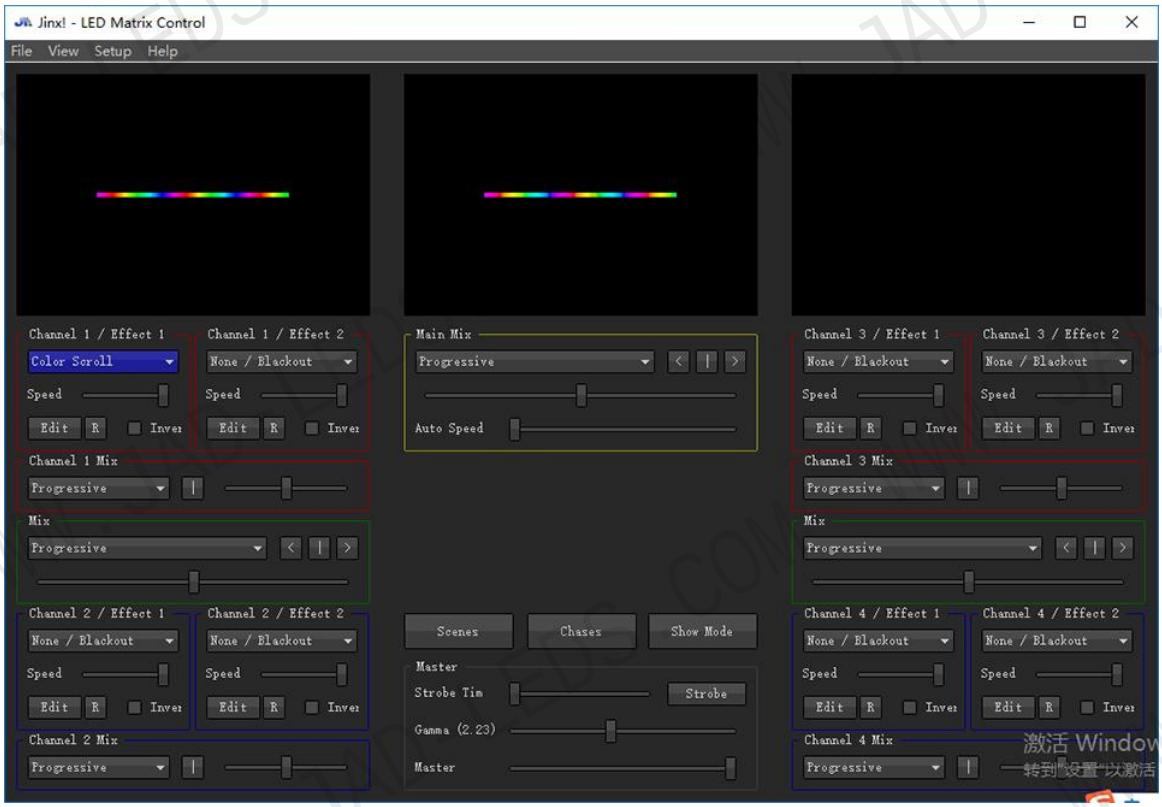
WWW.JAD-LEDS.COM



Choose "Audio Auto Gain Control" if you need music effect

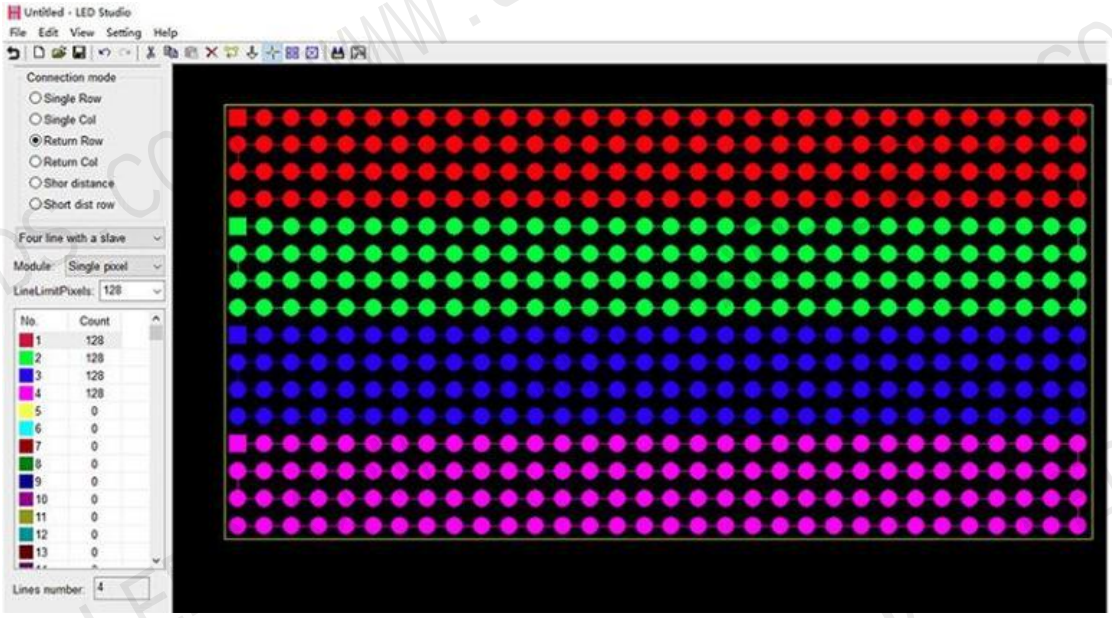


You can use Jinx! to control lights !!! The following is just for example

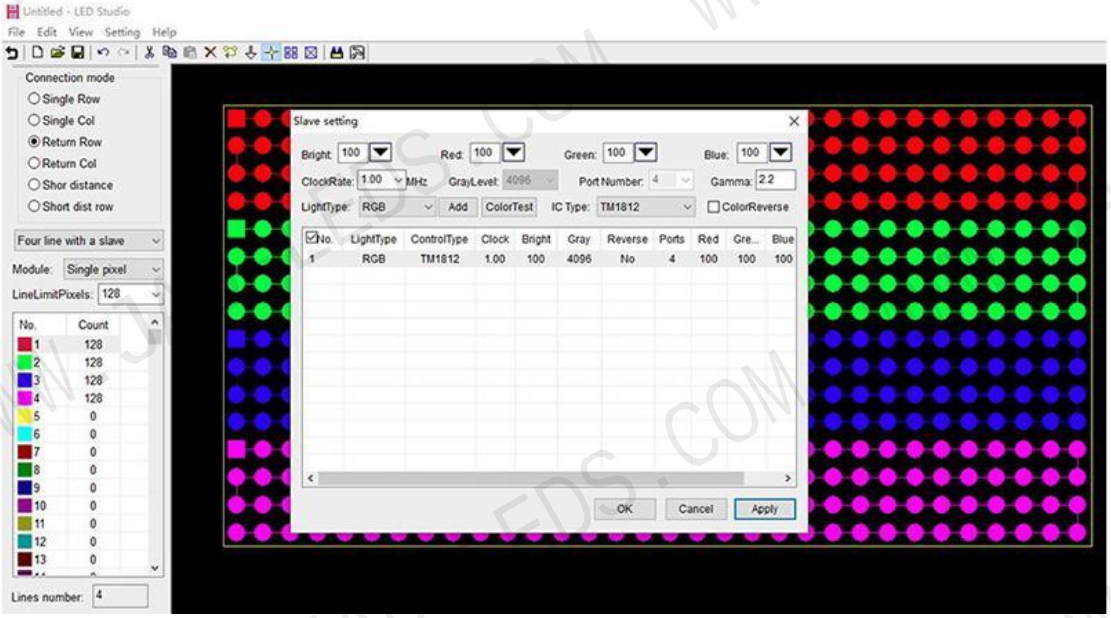


7. Basic Working Procedure for Led Studio

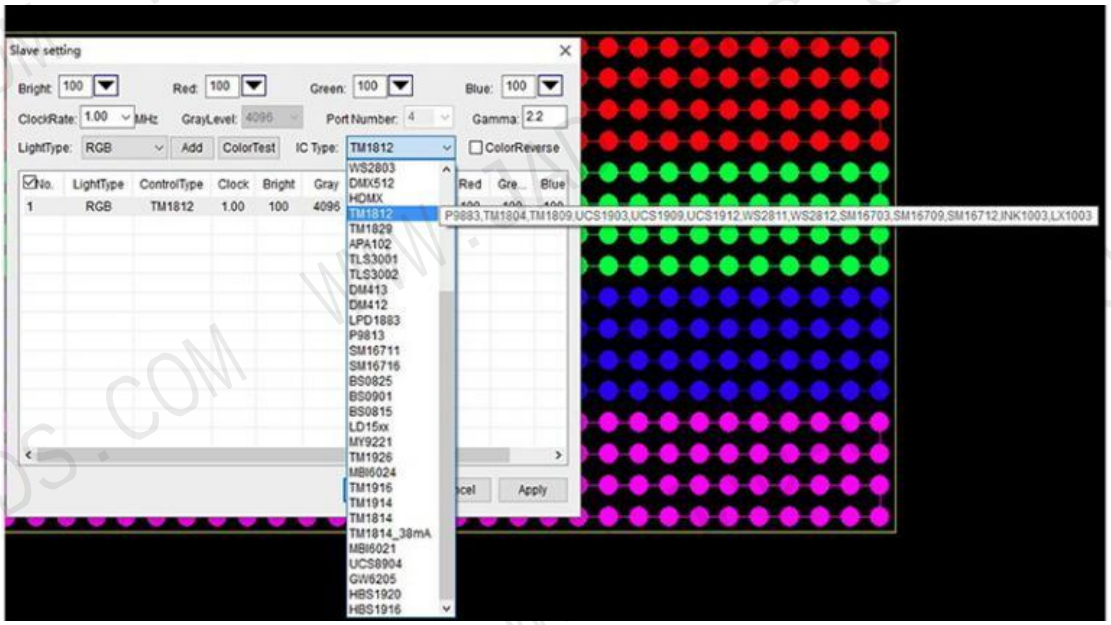
Place Pixels



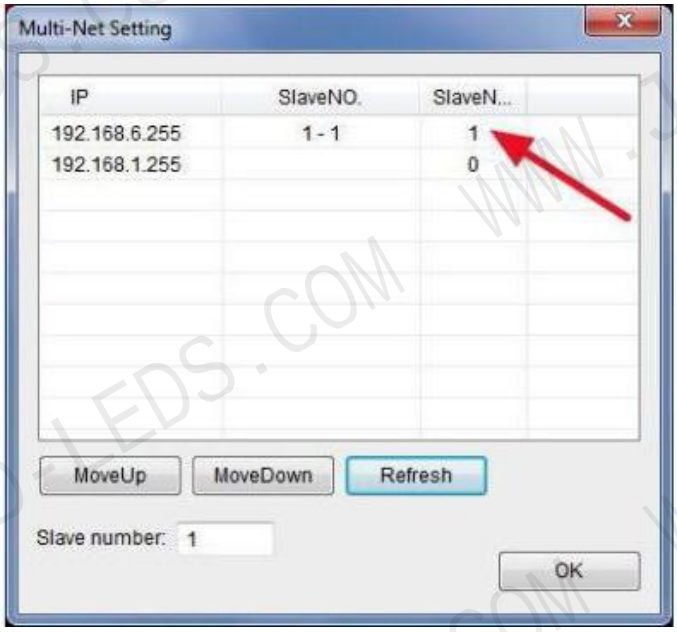
Slave setting



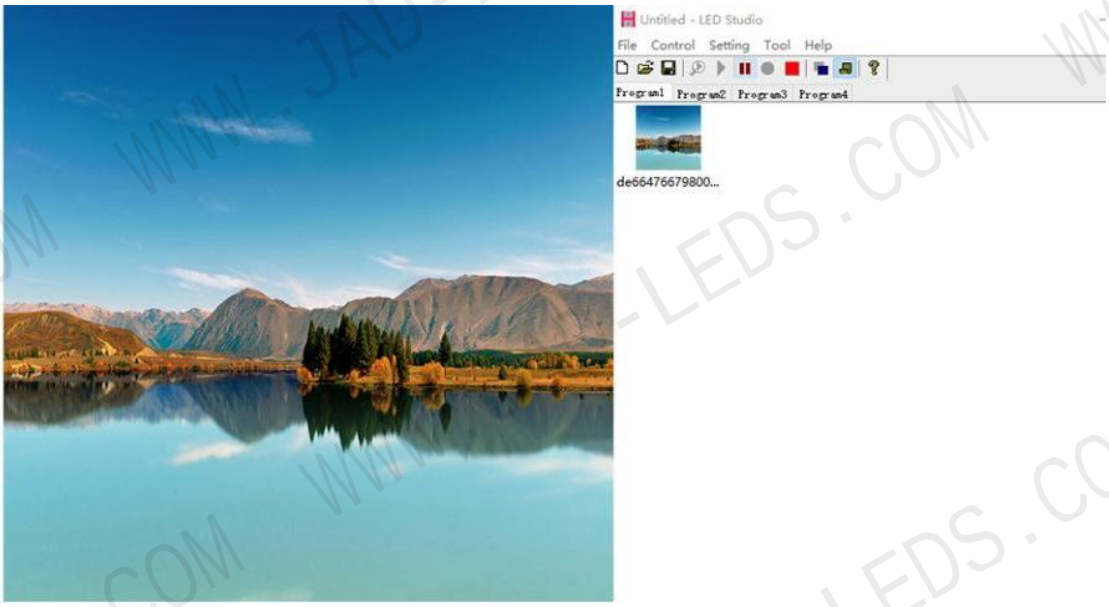
Note: many chips use one option



Allocate controller for the specified IP address.



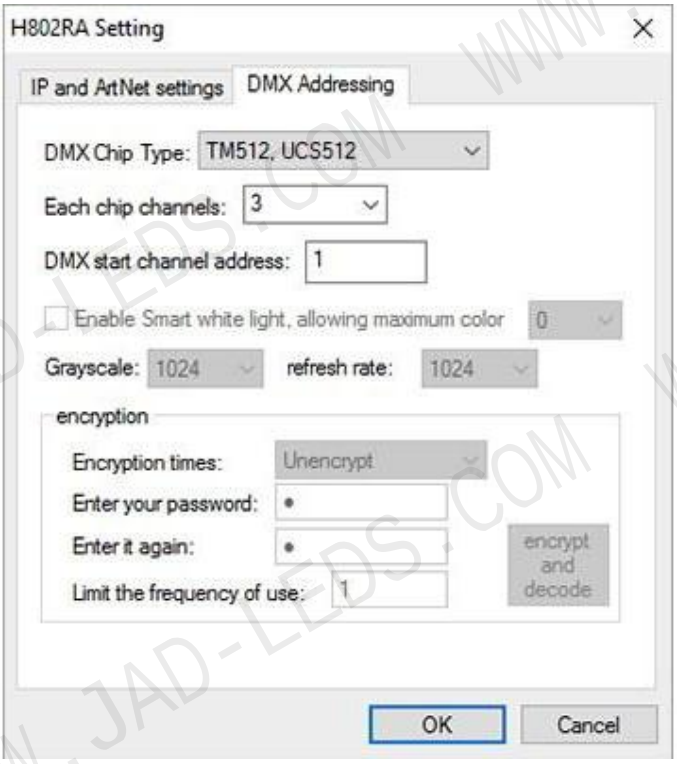
Make Animation



8. Set Address for DMX512 chips

(1). Please connect your lamp to controller according to the connection method i post above(under PCB Layout).

(2). In LED Studio, click "Setting" -- "H802RA Setting".



After several seconds, lamp will turn white then green, please repower the lamp.

H802RA can address for maximum 1024 pixels.

9. Specifications

Input Voltage: Customized

Power Consumption: 1.3W

Drive Pixels Number: 4096

Weight: 1KG

Dimension: L163 x W155 x H54

Carton Size: L205 x W47 x H21