

LX9 Media & Lighting Show Server Handbook

Ver 3.01



LINETX Technology Co., Ltd.

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This manual is the technical manual for LX9 series light controller, applicable to LX9 series sub-models, software version is V201 and above compatible software version.

Commonly used LX9 sub-models are shown in the table below.

Type	Description	Size (mm)	Software	Hardware
LX9-U	2U Rack 8Ports Isolated DMX512 Ports	430*88.9*153	V306	V201
LX9-H	Box Style 16 Ports Isolated DMX512 Ports	172*166*53	V306	V201

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The follow-up upgrade of related products may be slightly different from this manual, and the upgrade of the manual may not inform you in time. Please pay attention to the discrepancies between the actual product and the description in this manual.

For more product information, please visit: www.linetc.com

Technical Email: tech@linetc.com

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1. INTRODUCTION

1.1. Overview

LX9 Media Lighting Server is a multifunctional controller developed by LINETX Technology. It has 4-core CPU, dual Gigabit 1000M Ethernet ports and audio/video interfaces, which provides powerful performance and rich application scenarios and is suitable for a variety of lighting control project.

LX9 can synchronize lighting, audio and video output by editing the timeline with LINETX's LnxShower software, which is very suitable for lighting control in stage, cultural and tourism lighting projects or other lighting project.

LX9 has 8 isolated DMX512 XLR ports, all ports support RDM, RDM fixture can be directly managed using RDM protocol, furthermore with extension by LINETX's LNX-378D or LNX-378T slave lighting controller, could put more DMX fixtures or TTL pixel tape in project.

LX9 supports ArtNet-4 protocol, can to be as a slave role, docking console or such as MADRIX, MADMAPPER and other lighting software, and the device supports ArtNet data recording and playback. In the playback state, LX9 acts as a master controller, integrating and synchronizing lighting and multimedia resources, and driving other lighting slave controller.

LX9 supports create schedule, which allows you to running the lighting show in a scheduled moment according to the expected date and time. Meantime the sunrise and sunset way to set time is supported too.

The LX9 has a command set that can be remotely controlled via Ethernet/UDP or RS485, and the control command set makes it easy to integrate the device into third-party management systems.

The LX9 has a high-definition display that shows a wealth of information about the unit's operating status and allows for on-site setup of the unit via the unit's panel buttons or shortcut knobs.

LX9 has a WEB management backend with a powerful, user-friendly interface that can be set up remotely via a computer or phone's browser.

1.2. Application



1.3. Features

LX9 has a wealth of features, suitable for a variety of lighting/multimedia control projects.:

- **Synchronization:** Lighting, audio and video resources be edited and output synchronously
- **DMX512 ports:** The device has eight magnetically isolated DMX512 XLR ports
- **RDM:** All 8 DMX512 interfaces of the device support the RDM protocol
- **ArtNet:** The device supports the latest ArtNet-4 protocols
- **Record and Playback:** Supports recording ArtNet data to form a lighting file for playback, or synchronized playback with audio/video files.
- **Schedule:** Create a schedule to play the lighting show on time and on schedule, supporting sunrise and sunset times.
- **Time synchronization:** Support network time synchronization
- **Easy to manage:** High-definition LCD operation screen, with WEB management system
- **Firmware update:** Support uploading firmware update via WEB.
- **Powerful performance:** 4-core processor, dual Gigabit Ethernet, audio-microphone interface, HDMI interface, USB 3.0 interface

2. LX9-U interface

High-definition screen to show the operation status of the device.

Screen brightness can be set via WEB management system.

Shortcut knob: Rotatable and pressable.

rotate knob to quickly select the item to be operated.

Press knob to confirm the operation.



The operation keys, from left to right are Power key, Switch key, Focus key, Left key and Right key.

Power Button: Long press to shut down and short press to restart controller

Switch key: short press to switch the main interface of the device.

Focus key: short press to switch to focus on the operating elements of the current interface for operation.

Left key: left operate

Right key: right operate

Device status LED , from top to bottom:

Control status LED: blinks when external control data is available

Data indicator LED : blinks when there is DMX data output

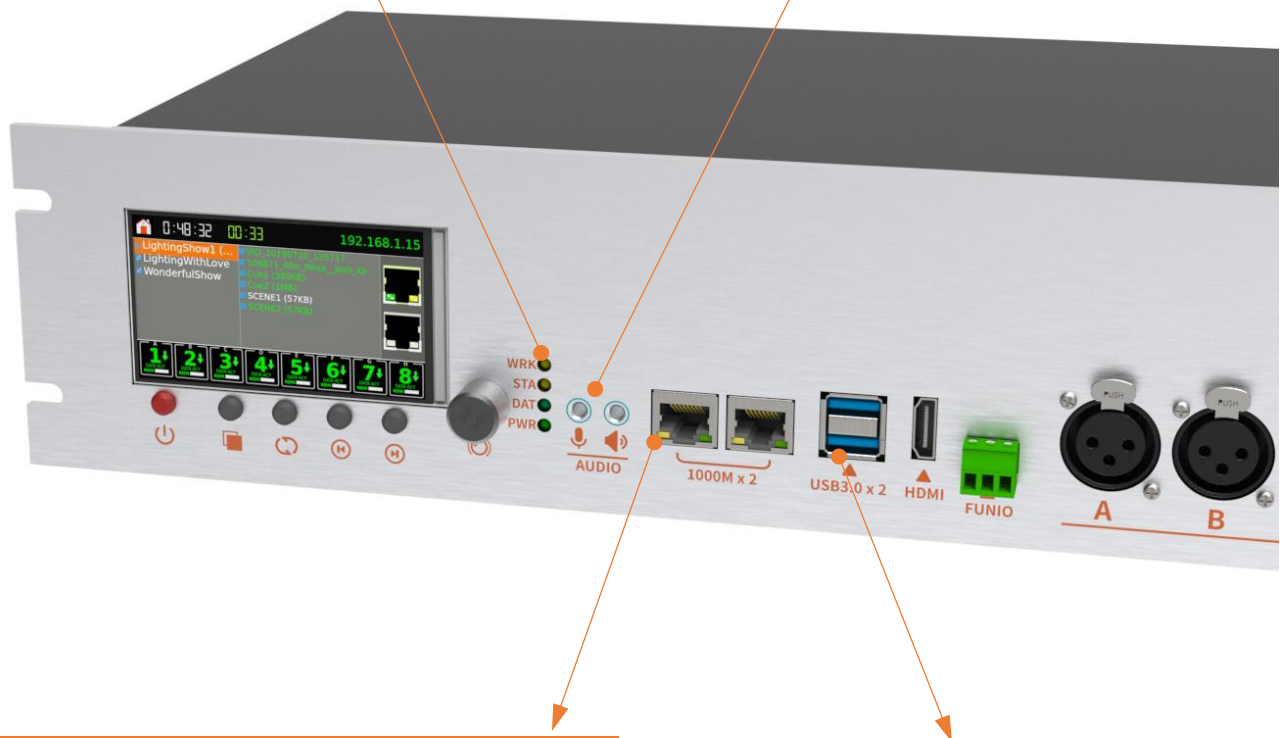
Operation status LED : blinks when the device is running normally

Power Status LED : Light on when power is supplied

The audio connectors, from left to right:

MIC Jack: 3.5mm microphone audio input jack

Audio jack: 3.5mm audio output jack



Two 1000M Gigabit Ethernet Ports

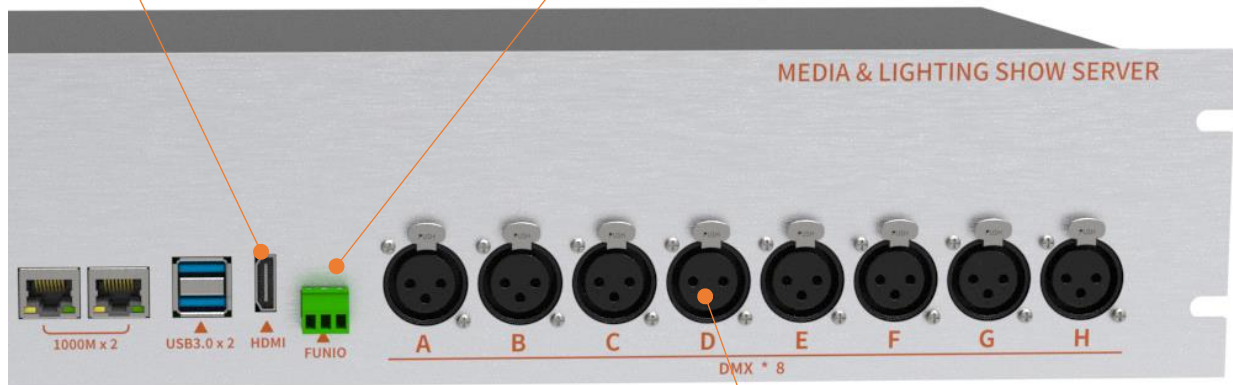
USB3.0 x 2

HDMI Port:

The video signal of the lighting show is output from this HDMI port to the display device

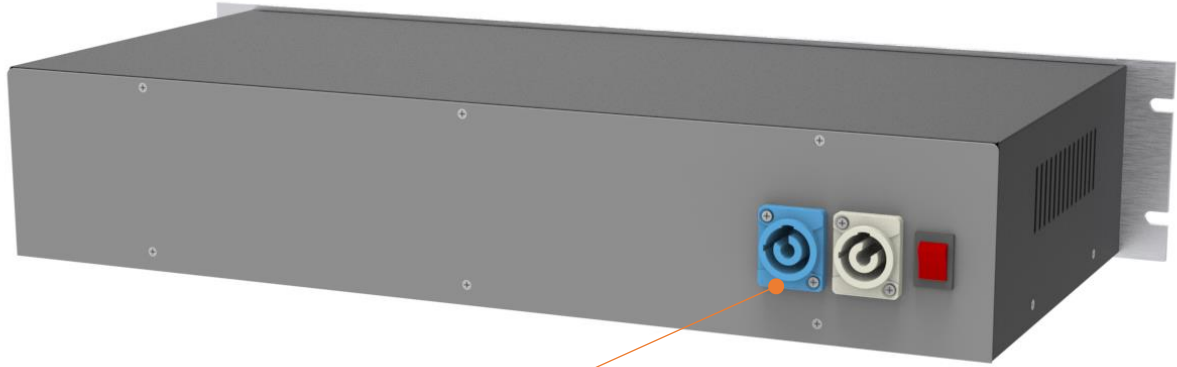
Control FUNIO, from left to right:

1. D+
2. D-
3. GND



8 DMX512 Ports, 3 Pin XLR:

1. GND
2. D-
3. D+



PowerCon AC Supply Jack: AC: 100-240VAC 0.35A 50/60Hz

3. LX9-H interface





The operation keys, from left to right are Power key, Switch key, Focus key, Left key and Right key.

Power Button: Long press to shut down and short press to restart controller

Switch key: short press to switch the main interface of the device.

Focus key: short press to switch to focus on the operating elements of the current interface for operation.

Left key: left operate

Right key: right operate



16 Isolated DMX512 Ports to drive DMX fixtures

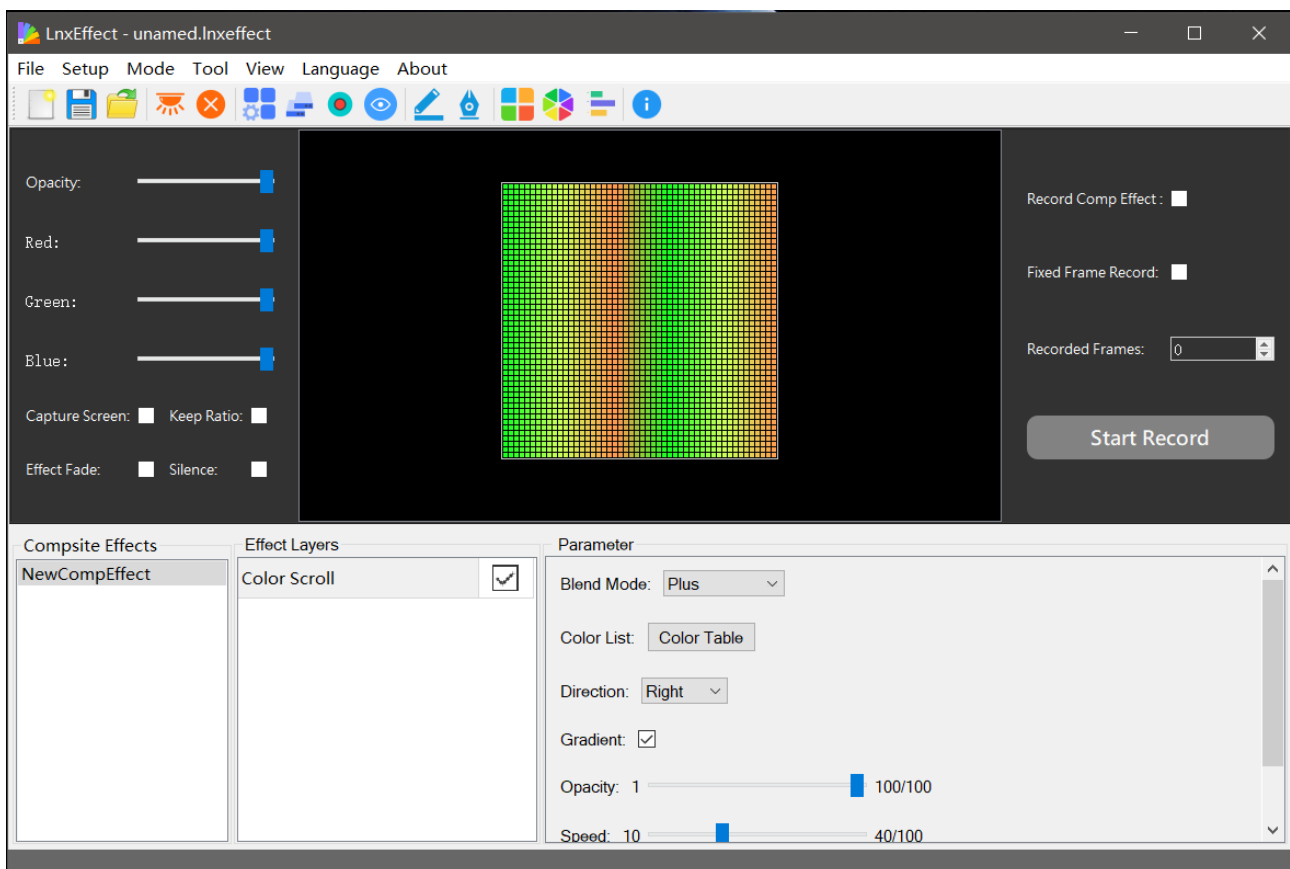
4. LX9 Configuration

4.1. Edit the Lighting Show Project

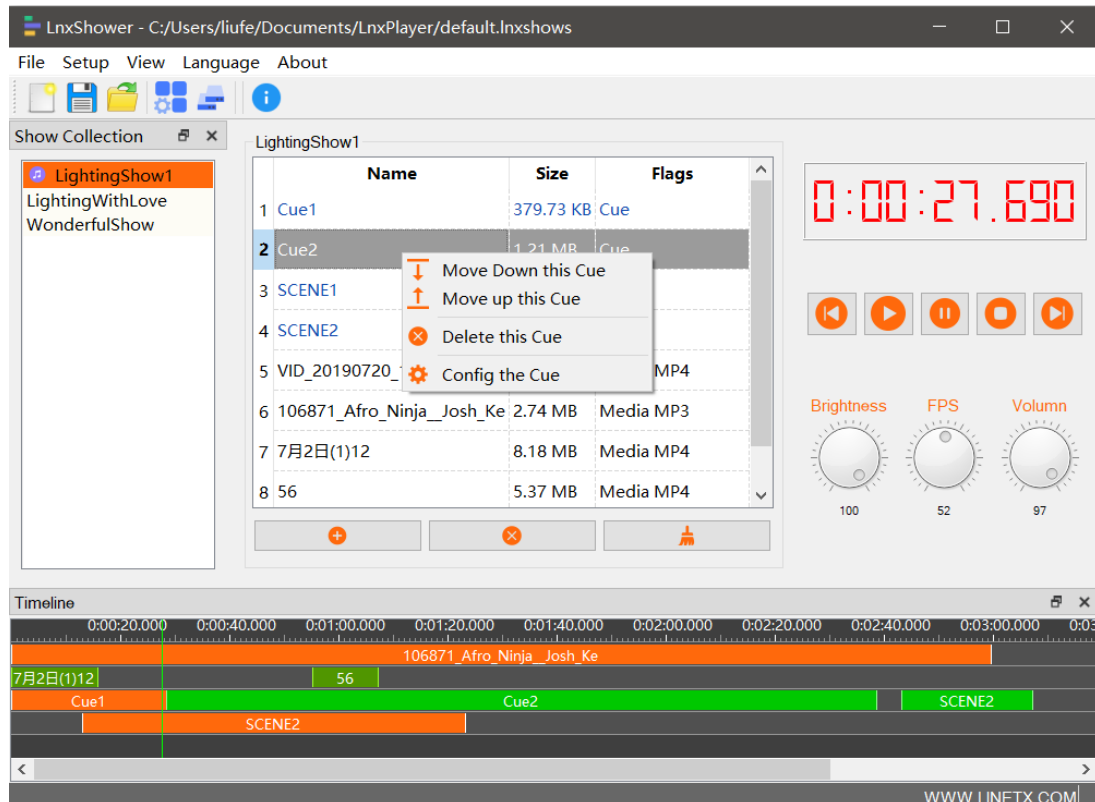
LX9 organizes and manages each lighting show in the form of a lighting show project, the so-called lighting show is a collection of lighting cue, MP3 and/or video MP4 resources.

The file extension of the lighting show project file is .lnxshows. The lighting show project file is edited and generated by LINETX Technology's LnxShower software, and then saved as an lnxshows file after editing and previewed, and then uploaded to the LX9 server for playback.

The LnxShower software is part of the LnxEffect software suite, which can be found on LINETX's website at www.linetc.com. After installation, run LnxEffect as shown below:



Click on the icon  to bring up the LnxShower program as follows:



Once the lighting show has been edited and preview confirmed, save to generate an Lnxshows file that can be uploaded to the LX9 server.

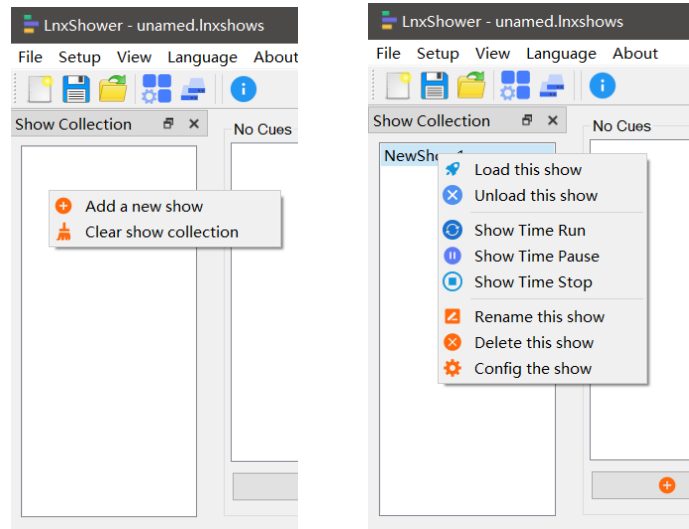
4.1.1. LnxShower Operating

LnxShower is used to edit the lighting show running at LX9, a lighting show normally contain lighting cue files, multimedia files (MP3, MP4) files, in the LnxShower program to create a new lighting show project, and then add resource files mentioned above, then drag the resource files to the timeline inside (optional), you can complete the production of a lighting show.

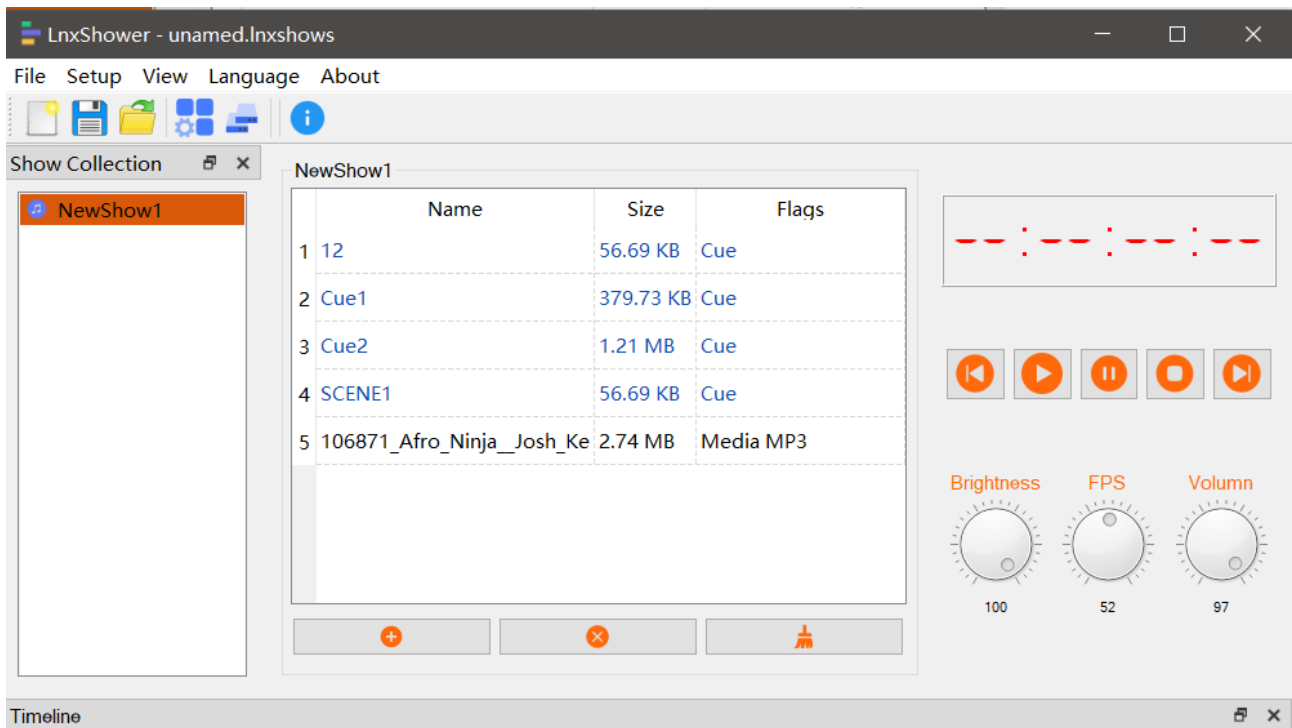
Click [File] -> [New show collection] to create a new lighting show project, or open a saved lighting show project.

- a. Right-click in the lighting show project list at the blank place, in the pop-up dialog box click

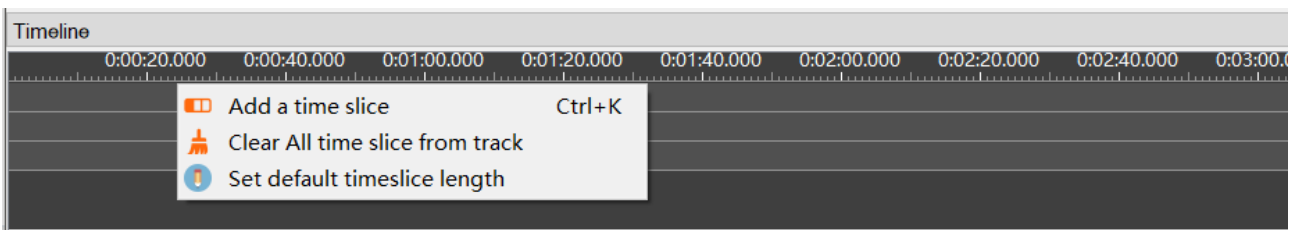
[Add a new show], this will create a lighting show named NewShow1, right-click on the lighting show, the lighting show pop-up configuration menu, in the configuration menu, click [Load this show], to load the lighting show, the next step is to add the resource file to the lighting show.



b. Click the  button, Add resource files to the loaded lighting show:

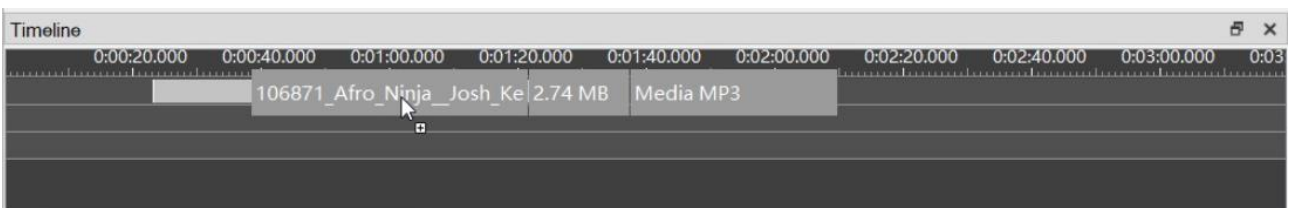


- c. To this step, an ordinary lighting show without a timeline has been created, saved it to lighting show project file .lnxshows, this can be uploaded to the LX9 device to run, if you need to further synchronize the multimedia files, you need to add the such resources to the timeline, right-click on the timeline track, in the pop-up time track of the operation menu, select [Add a time Slice]:

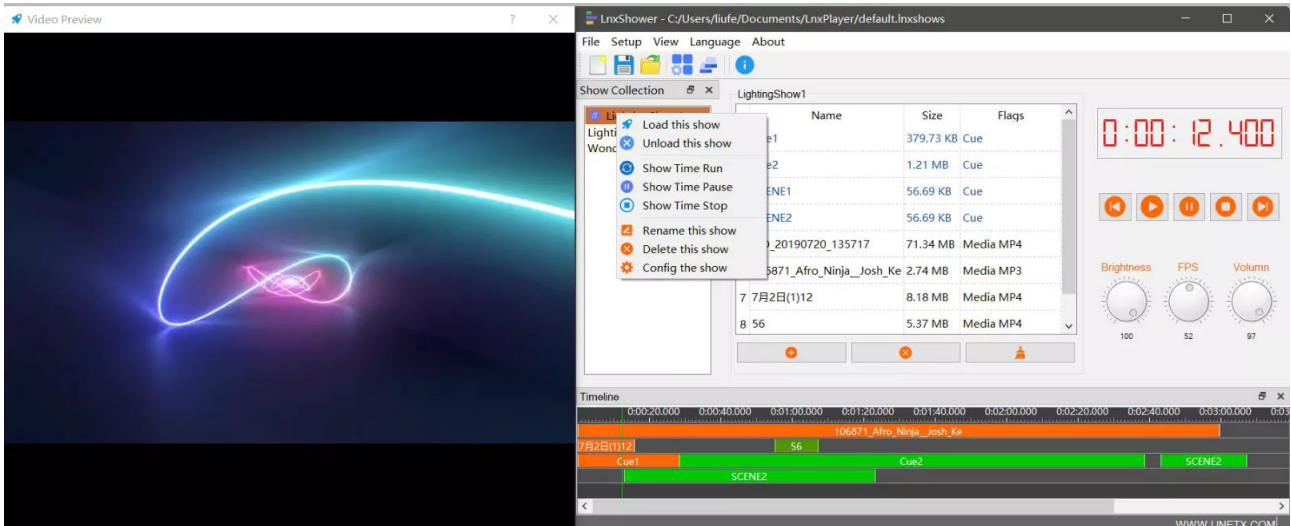


The time-slice can be dragged to adjust its position, stretch or shrink the time-slice length to ensure that the time-slice is in a correct position and length, the default length of the newly created time-slice can also be adjusted in the menu [Set Default timeslice length].

- d. Drag a resource in the resource list to place it to the time-slice:



- e. Add more time slices and put the resources into each time slice as needed, click the [Play] button to preview the lighting show. If you are connected to LINETX's slave controller at this time, please click the  button, Search for adding slave controller before outputting lighting data to the slave controller to drive each fixture or pixel tape.



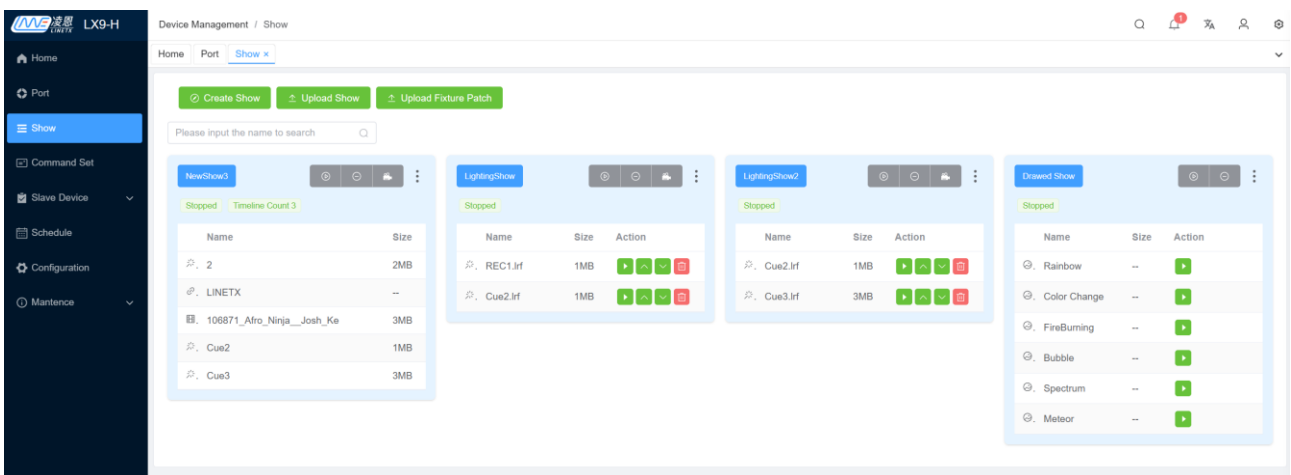
- f. After previewing the lighting show, the saved Inxshows file can be uploaded to the device via LX9's WEB backend management mentioned below.

4.2. Upload and playback Show

Use the device's WEB management backend to upload the lighting show project file Inxshows.

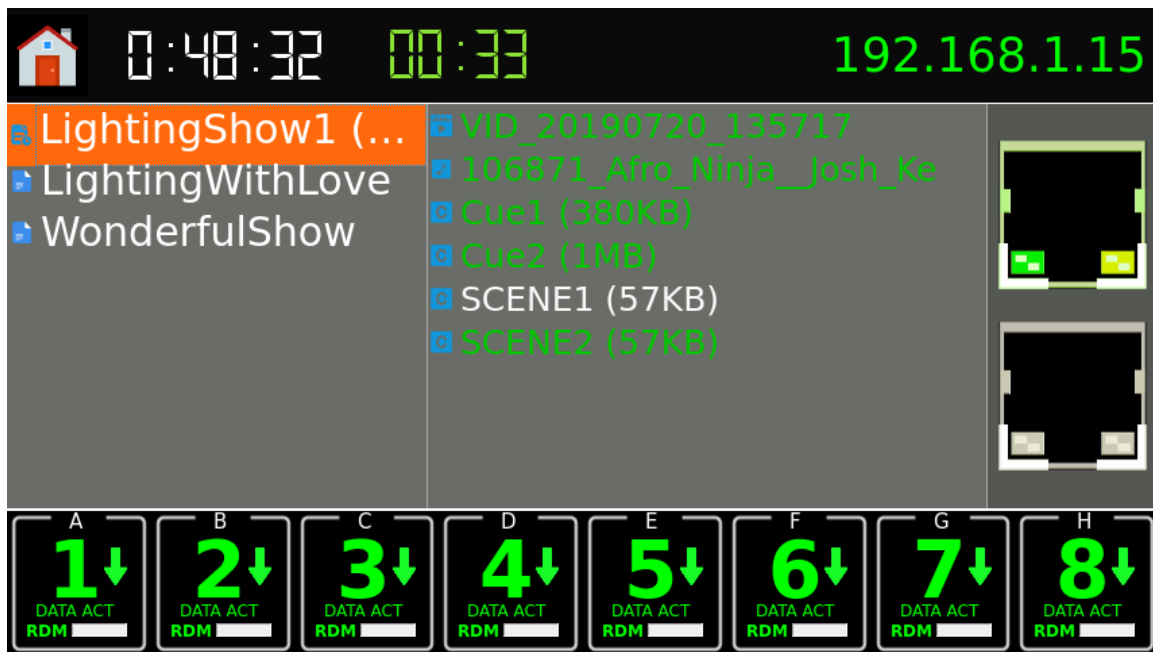
Open a browser on your PC and enter the IP address of the LX9 to access the WEB management backend of LX9. The IP can be founded in the upper right corner of the panel screen.

In the [Manage Show] page, click [Upload show], select the lighting show Inxshows file that needs to be uploaded, and then you can upload the lighting show to device:



After uploading the lighting show project file, the web page will display the lighting show of the project in the form of card, click the card to start running the lighting show, click again to pause it, and click the [Stop] button on the upper right corner of the card to stop running the show.

The panel screen will list the information of that uploaded lighting show project too as shown below:



As the figure showed above, the topmost status bar items from left to right: system time, lighting show timeline's time, IP address; the left list of the main content list each all shows, and the right content list resources in show including audio, video, lighting CUE files etc.; at the bottom of content show various information about the 8 DMX512 ports of the device, including UNIVERSE address, data direction, and RDM status etc.

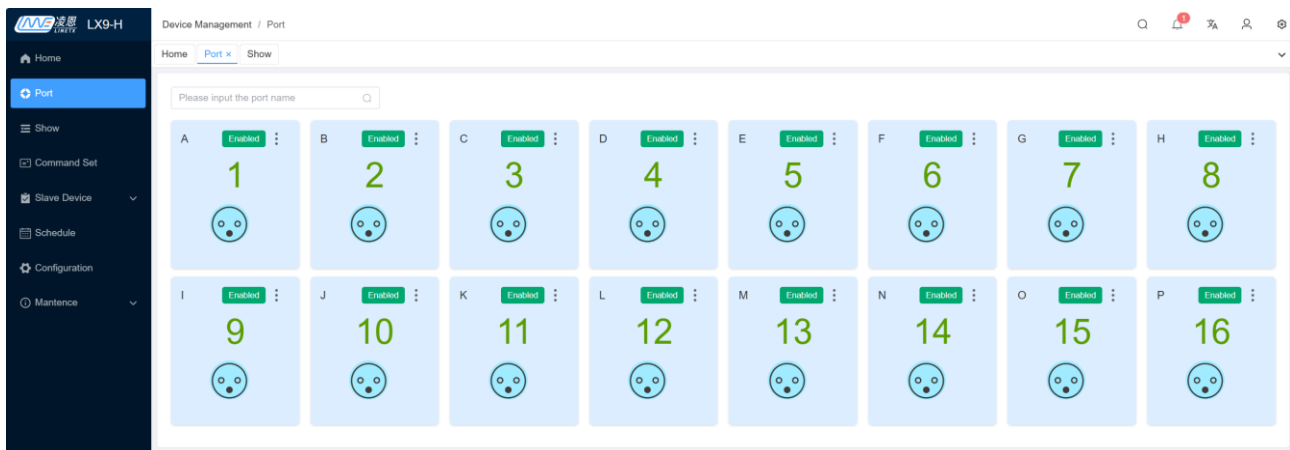
Rotating the shortcut knob  key, you can quickly select the lighting show you want to play, short press the knob to start the playback, short press again to pause it and long press the knob to stop the playback of the lighting show.

When the lighting show has timeline to synchronized, the status bar will display the current time of the lighting show's timeline: 

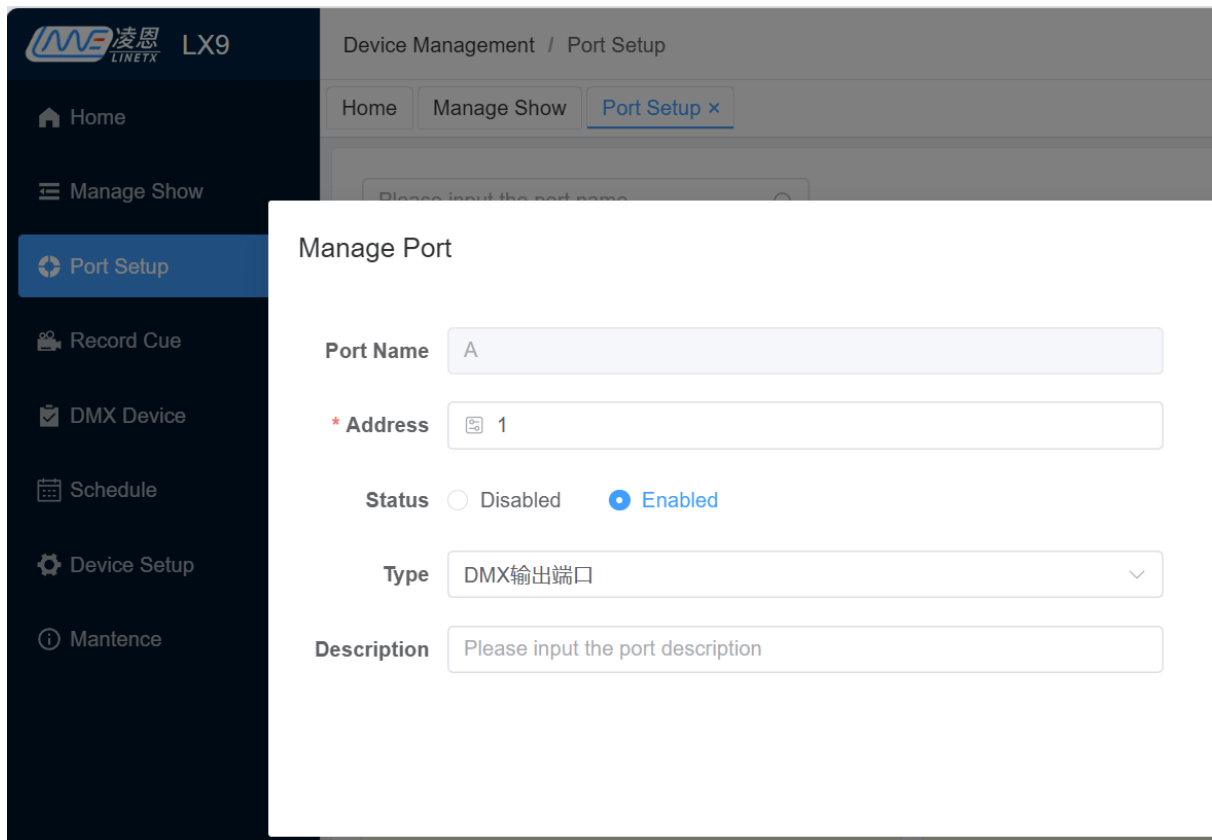
If this lighting show contains audio and video resources, please connect amplifier or stereo by the 3.5mm audio jack, and connect it to the display device such as projector, LED pixel screen, etc. through the HDMI port.

4.3. Port Setting

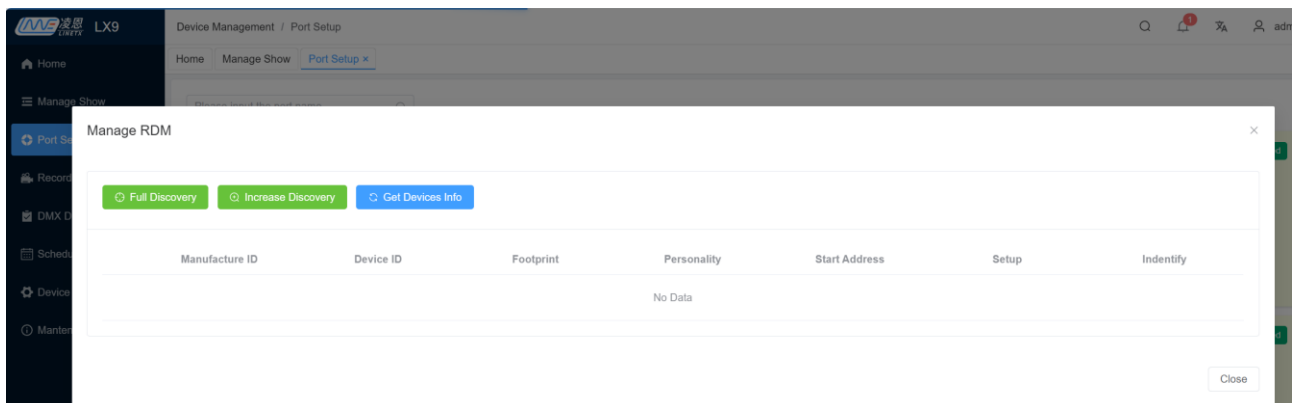
The DMX512 ports of LX9 can be configured at the WEB management system, click [Port Setup] to display the information cards of the 8 ports:



Click the button  at upper right corner of the port card and click [Manage] in the pop-up management menu to set attributes of the port, including: port address, port status, port type, port description and so on:



Click [RDM] in the drop-down menu, and at the pop-up dialog, you can operate the RDM devices on that port, including searching, operating, and deleting RDM fixture:



At this dialog box, clicking [Increase Discovery] will delete the previously discovered RDM DMX512 fixtures and search for the fixtures again, clicking [Full Discovery] will search for new RDM fixtures and add them to the list, and clicking [Get Device Info] will go through the process of obtaining the basic information of the fixtures and displaying it to the list.

4.4. Viewing DMX Port Data

In the panel screen of LX9, you can view the DMX512 data output from each universe address.

Click the switch key on the panel to switch to the DMX Viewer:

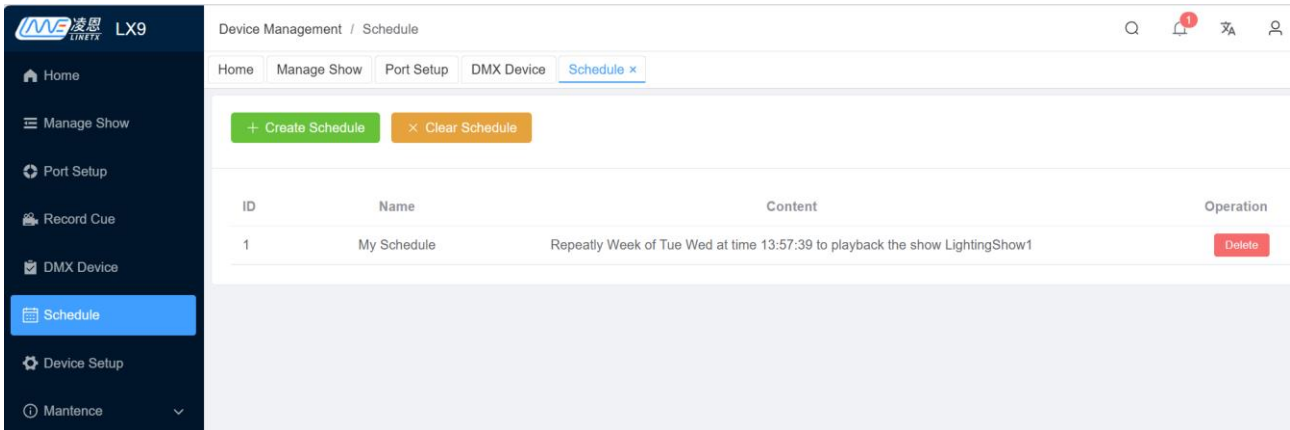
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
1	18	18	18	10	10	10	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	
33	5	6	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	9	
65	9	9	9	9	9	16	16	16	24	24	24	31	31	31	39	39	39	46	46	46	54	54	54	61	61	61	69	69	69	77	77	77	
97	84	84	84	92	92	92	99	99	99	107	107	107	114	114	114	122	122	122	129	129	129	137	137	137	144	144	144	152	152	152	159	159	
129	159	151	151	151	143	143	143	135	135	135	128	128	128	120	120	120	112	112	112	104	104	104	96	96	96	89	89	89	80	80	80	73	
161	73	73	65	65	65	57	57	57	49	49	49	42	42	42	34	34	34	26	26	26	18	18	18	10	10	10	2	2	2	3	3	3	
193	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	
225	6	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	9	9	9	9	9	9	9	16	16	16	24	24	24	31	
257	31	31	39	39	39	46	46	46	54	54	54	61	61	61	69	69	69	77	77	77	84	84	84	92	92	92	99	99	99	107	107	107	
289	114	114	114	122	122	122	129	129	129	137	137	137	144	144	144	152	152	152	159	159	159	159	151	151	151	143	143	143	135	135	135	128	128
321	128	120	120	120	112	112	112	104	104	104	96	96	96	89	89	89	80	80	80	73	73	73	65	65	65	57	57	57	49	49	49	42	
353	42	42	34	34	34	26	26	26	18	18	18	10	10	10	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	
385	4	4	4	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	
417	7	8	8	8	8	8	8	9	9	9	9	9	9	9	16	16	16	24	24	24	31	31	31	39	39	39	46	46	46	54	54	61	
449	61	61	69	69	69	77	77	77	84	84	84	92	92	92	99	99	99	107	107	107	114	114	114	122	122	122	129	129	129	137	137	137	
481	144	144	144	152	152	152	159	159	159	151	151	151	143	143	143	135	135	135	128	128	128	120	120	120	112	112	112	104	104	104	0	0	
UNIVERSE:																0																	

As shown above, it shows all the channel values of the DMX512 with universe address 0. The table has 32 rows and 16 columns, exactly 512 channels, with red squares representing that the DMX channel value is increasing, green squares representing that the DMX channel value is decreasing, and white squares representing that the DMX channel value is not changing.

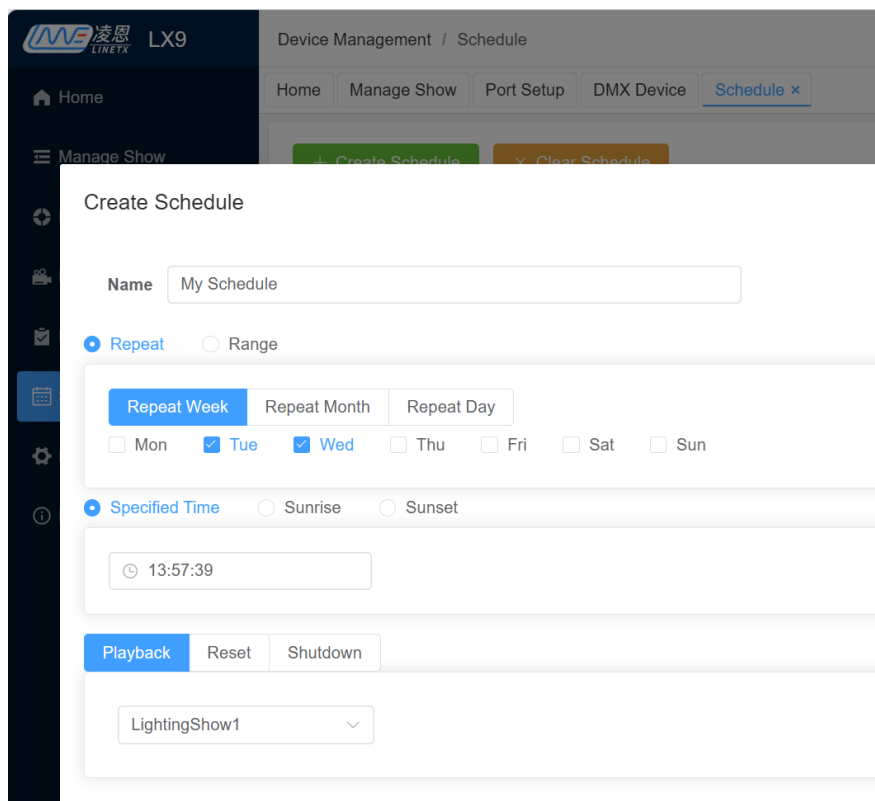
The universe to be viewed can be changed by rotating the shortcut knob.

4.5. Create Schedule

LX9 supports create schedules, which can be used to play a specified lighting show on a specific week, or on a specific date and time point. Open the device's WEB, and click [Schedule] to list all of the device's schedules:



Click the [Delete] button in the list to delete the schedule, and click [Create Schedule] to bring up a dialog box to create a new schedule:



Date designation: You can designate the date by [Repeat] or [Range], and you can designate the date you want to set by Repeat Week, Repeat Month, and Repeat Day when you select the Repeat method. When a range mode is selected, the start date and end date can be set:

Designation of actions: You can designate three actions such as [Playback], [Restart], and [Shutdown].



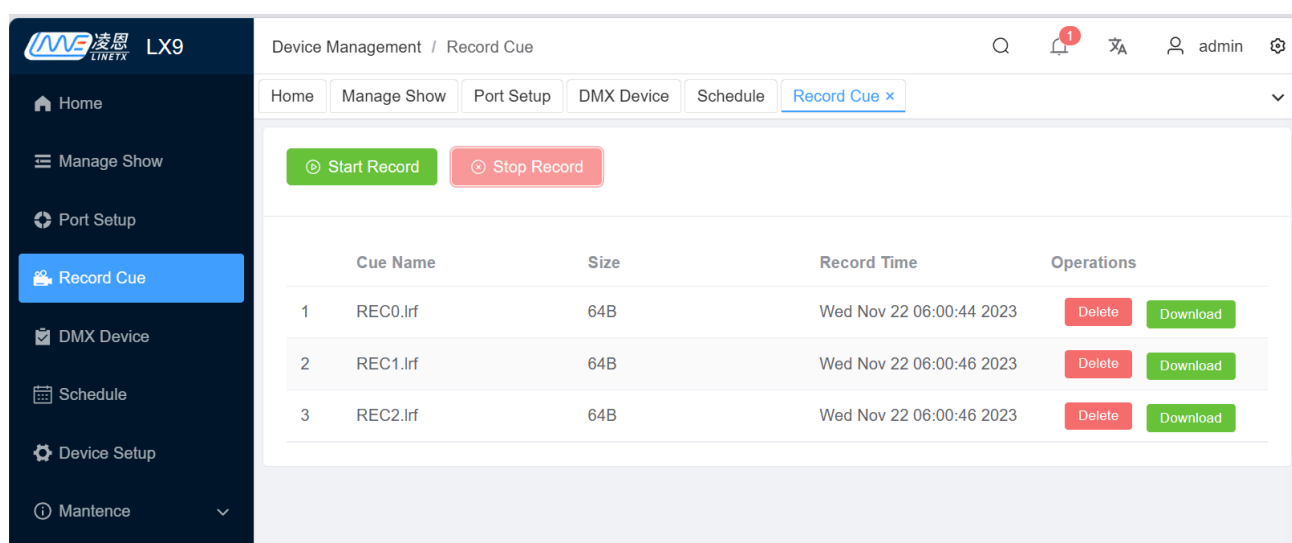
Sunrise time and sunset time are related to the latitude and longitude of the device, so please set the latitude and longitude data of this device first.

4.6. Recording ArtNet

A lighting show contain lighting cue data, audio and/or video data, and the lighting data is often sourced from variety of light console or light control program, like MA2 Console, Tiger Console, King Kong console or light program like MADRIX, Madmapper, JINX, Arena, etc., and usually these consoles or programs support ArtNet.

One of the features of the LX9 is to record ArtNet data and add it to the lighting show as a lighting CUE resource.

Open the WEB of the LX9 and click [Record Cue], the page is showed as follows:



	Cue Name	Size	Record Time	Operations
1	REC0.lrf	64B	Wed Nov 22 06:00:44 2023	Delete Download
2	REC1.lrf	64B	Wed Nov 22 06:00:46 2023	Delete Download
3	REC2.lrf	64B	Wed Nov 22 06:00:46 2023	Delete Download

The list shows all the recorded CUE files in LRF format, the operation buttons on the right side

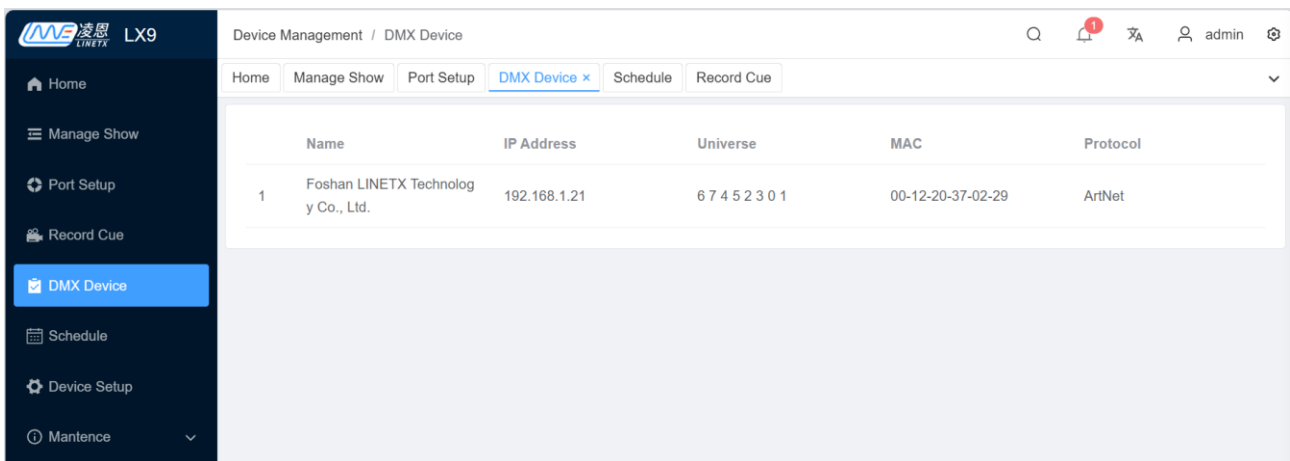
can [Delete] or [Download] the file, click [Start Record] to start the recording, record all the ArtNet data passing through the LX9's Ethernet ports, and click [Stop Record] to stop the recording and save the CUE file, and add it to the list to be displayed.



Light effects can also be created using LINETX's LnxEffect software, which can directly generates CUE files supported by LX9.

4.7. Viewing the Slave DMX Device

LX9 as the master device, can be connected to all kinds of LINETX's lighting slave controller via Ethernet, including LNX-370SP series of pixel tape slave controllers, LNX-378D series of DMX slave controller and so on, and all slave device on the network can be queried and listed out in WEB:



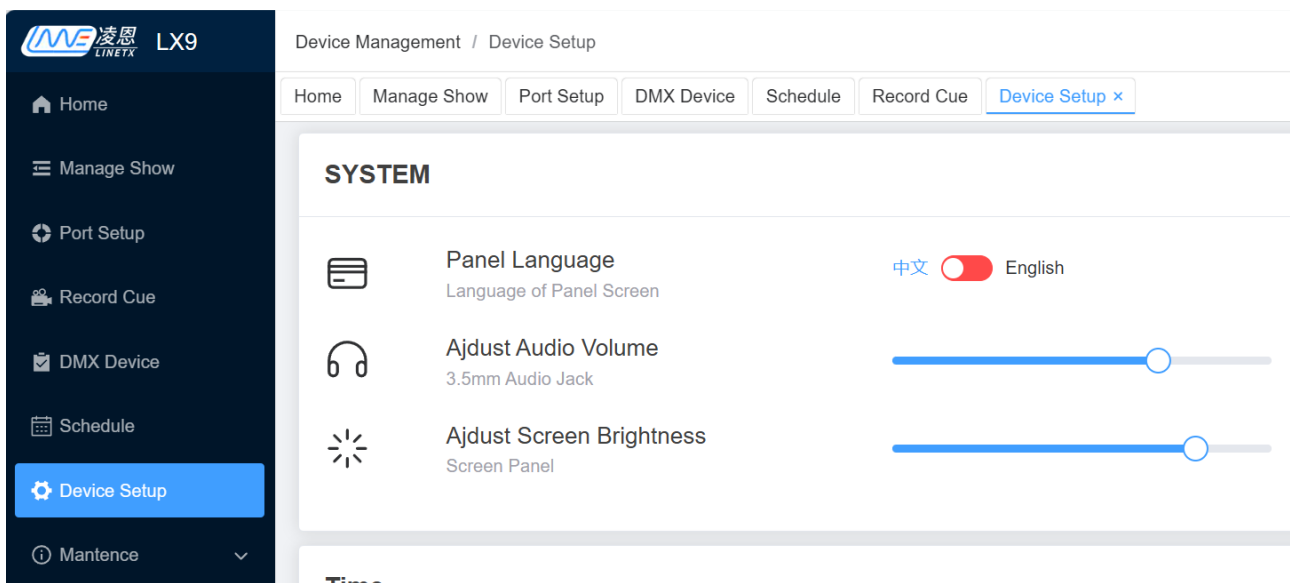
Name	IP Address	Universe	MAC	Protocol
1 Foshan LINETX Technology Co., Ltd.	192.168.1.21	6 7 4 5 2 3 0 1	00-12-20-37-02-29	ArtNet

As shown above, the LX9 is currently connected to a slave controller, which displays information such as device name, IP address, universe address, MAC address, and operating protocol. This list is updated in real time according to the devices status on the network.

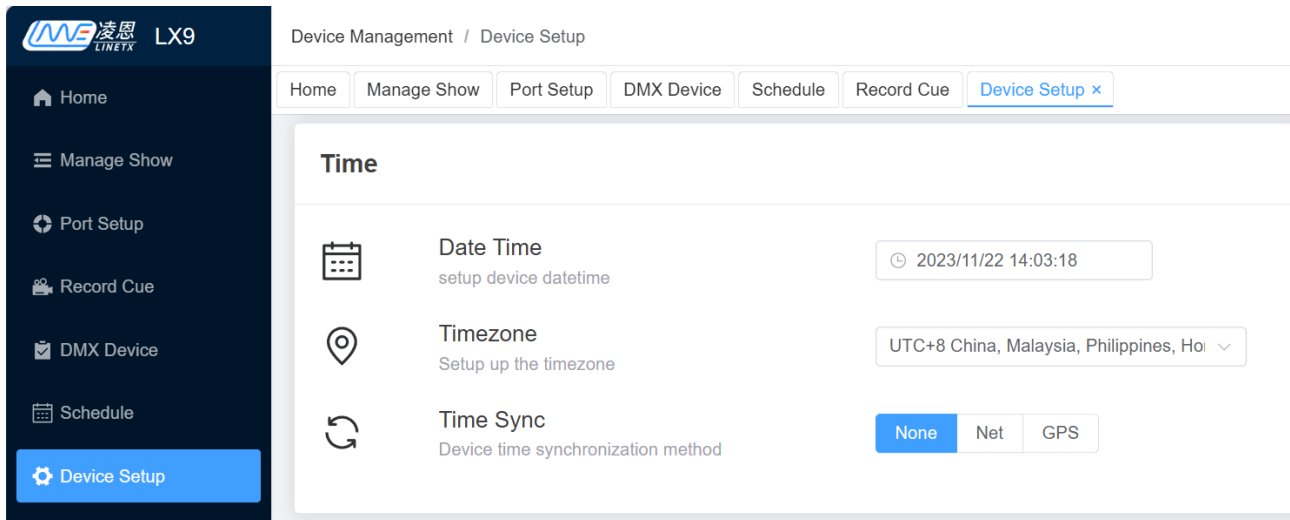
4.8. Config Device

The device settings of LX9 include several parts such as system settings, time settings, network settings, control interface settings, etc. Open the WEB management system and click [Device Setup].

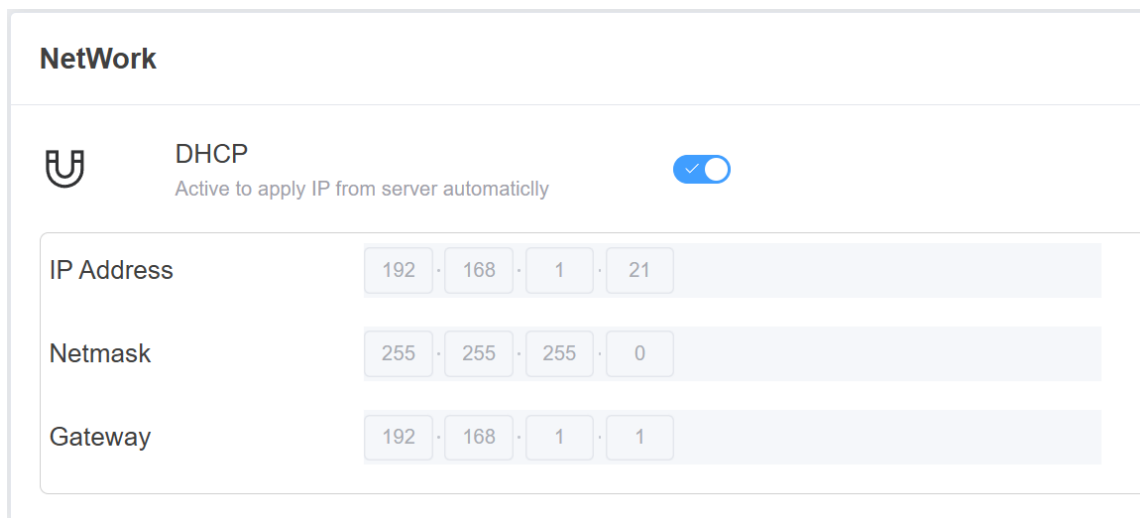
The 1st column is [SYSTEM], the settings include the panel Language, audio volume and screen brightness, the language of the screen switched in real time. The volume and screen brightness's value ranges is from 0-100, the higher the value, the higher the volume or the brighter the screen.



The 2st column is [TIME], which allows you to set the time parameters of the device including date and time, time zone, time synchronization, etc. When the time synchronization is set to network or GPS, the date and time specified manually will be invalid.



The 3rd column is [Network], which allows you to set the IP address, netmask and gateway, or you can enable the DHCP protocol to obtain an IP address automatically from host. When the DHCP is enabled, Manually setting the IP address is invalid.



Also, the IP address can be set in the panel screen by clicking the switch key to switch to the [SETUP NETWORK] view:



SETUP NETWORK

DHCP
☒

IP ADDRESS

192

168

1

21

NETMASK

255

255

255

0

GATEWAY

192

168

1

1



Press the focus key  on the panel, You can focus on the item you want to set. Rotate the shortcut knob to adjust the setting value up or down; or press the shortcut knob to turn DHCP on or off.

4.9. Firmware Upgrade

LX9 support upgrade its firmware, In the WEB management system, click the sub-menu [Upgrade Firmware] of [Maintenance], click the [Upgrade Firmware], upload the latest version of firmware provided by LINETX to automatically upgrade the device's firmware, and the device will reboot after the upgrade is completed.

 LX9

Home

Manage Show

Port Setup

Record Cue

DMX Device

Schedule

Device Setup

Maintenance

Upgrade Firmware

Factory Restore

Maintenance / Upgrade Firmware

Home

Manage Show

Port Setup

DMX Device

Schedule

Record Cue

Device Setup

Upgrade Firmware x

Upgrade Firmware

5. Parameter

Parameter	specifications
Protocol	ARTNET、sACN、UDP、RS485
Ports	LX9-U : DMX512 x 8 LX9-H : DMX512 x 16
Interfaces	1000M Ethernet x 2、3.5mm Audio Out、MIC-IN USB3.0 x 2、HDMI、RS485
Network	1000M Ethernet x 2
AC Power	100-240VAC 0.35A 50/60Hz
Rated power	10W
Operating temperature	-10~60°C
Operating humidity	5%~60%
MTBF	100,000 hours
Storage temperature	-40~70°C
Storage humidity	5%~90% non-condensing
Size	LX9-U : 430mm*89.5mm*153 mm LX9-H: 168mm(L)*54mm(W)*154mm(H)

