

LNx-900M LED Master Controller Manual

Ver 2.01



LINETX Technology Co., Ltd.

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This manual is the technical manual of LNX-900M LED controller, applicable to LNX-900M series sub-models, the software version is V2.01 and above compatible software version.

LNX-900M sub-models are shown in the table below.

Type	Sub-type	Software Version	Hardware Version
LNX-900M	LNX-900M	V2.01	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

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1. Introduction

1.1. Overview

LNx-900M LED master controller has rich feature which integrated with high-speed INTEL CPU, 2 Gigabit Ethernet ports, SSD and USB, etc. The monitor, mouse and keyboard can be connected to operate, And it also support using remote desktop to access it at remote PC.

With high-speed Gigabit Ethernet, the LNx-900M can record ARTNET data quickly and store to file, then play it later. The recorded files are also compatible with other types of LINETX controller, and can be copied to SD card for playback. Those recorded files can also be edited by using LINETX LnxEffect LED software to set the frame in/out point of the LED effect.

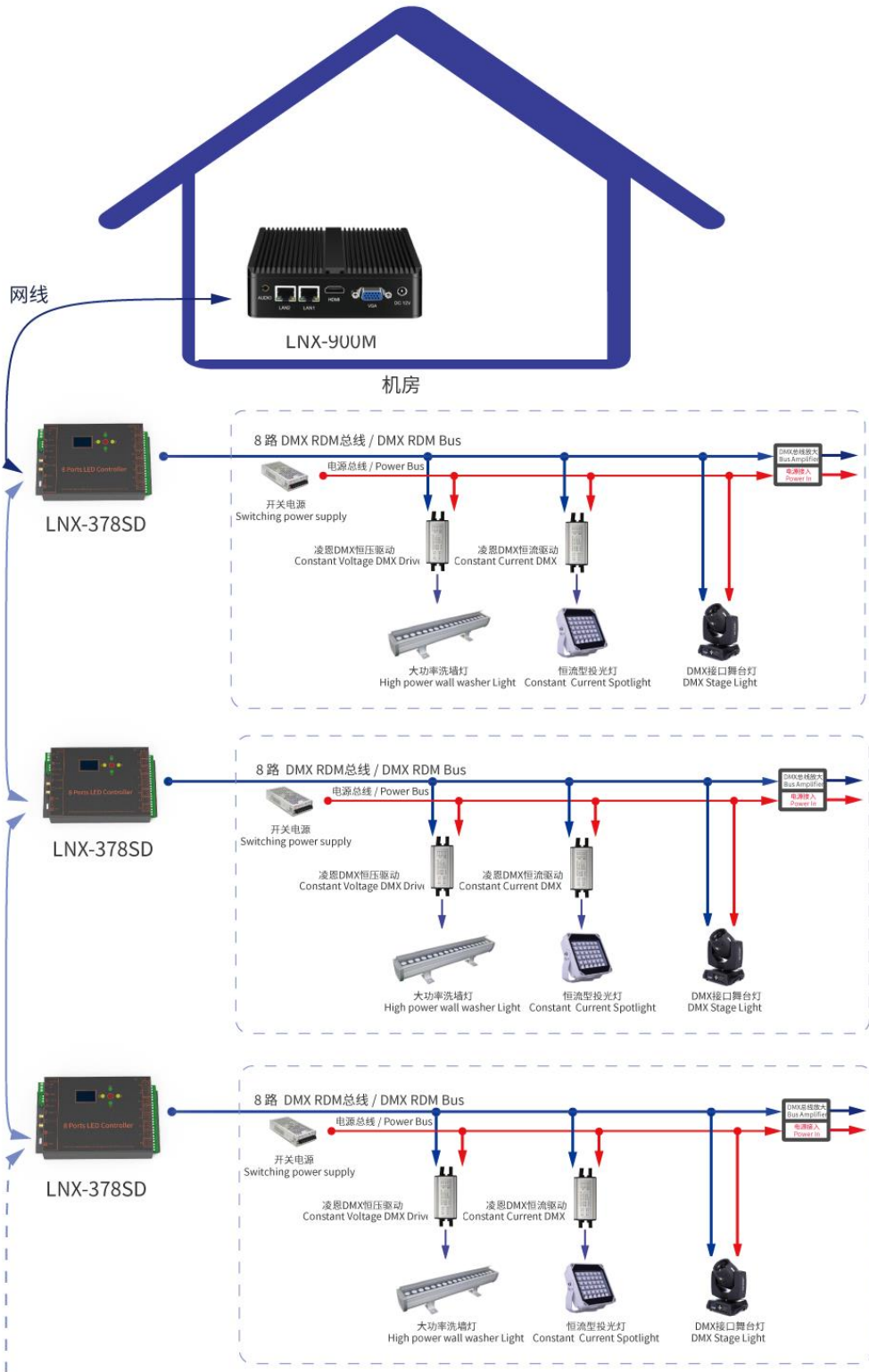
LNx-900M has the feather that sync the music timeline and LED effect. Edit the timeline, create empty time slices to timeline, drag the effect file to the time slice, then the effect file and timeline is linked together to synchronous play. Meanwhile the controller will output the played music through a 3.5mm audio jack, which can be connected to an audio power amplifier or speaker.

LNx-900M support to receiving ArtNet time code from external devices to synchronize the playback of local effect files, or sending time code to external devices when playing music.

LNx-900M can scheduled to play LED effect file (recorded or generated by LnxLight), and each effect file can be assigned some flags, including whether looped play, looped time, and the time to play.

LNx-900M support ARTNET control, UDP control, and LINETX Cloud control.

1.2. Application



1.3. Features

LNX-900M has many functions and features:

- ArtNet: Support ArtNet- 4;
- Record and Playback: 2 Giga-Ethernet to recording ArtNet data
- Editable Recorded File: Use LINETX LnxEffect software to edit the recorded file
- Sync with Music: Edit music timeline to sync playing of the LED effect file
- Edit Timeline: Fast to drag, scale and delete the time slice in timeline
- Receive Timecode: Receive external timecode to sync the playing of LED effect file
- Send Timecode: Send the timecode while play the media to sync external device
- Scheduled Play: Specify the date and time to play the effect file
- Cycled Play: Support cycled play and can specify the cycle time
- Audio Output: The audio can be playback and output to external speaker
- Black Field: Support black filed when device is idle
- Fade In/Out: Support fade in / out the effect when playing file is changed
- ArtNet Control: Support to use ArtNet universe channel to control the device
- Cloud Control: Support to use LINETX cloud to control device remotely
- UDPControl: Support to use UDP to control controller by host device;
- Dual Language: Support Chinese and English
- HMI Interface: Support external monitor and mouse/key to operate
- Remote Desktop: Support access device using remote desktop

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2. Interface of LNX-900M

2.1. Interfaces



3. Configuration

3.1. HMI Of LNX-900M

LNX-900M has HDMI and USB port and can be used for connecting to the mouse, keyboard and monitor.

And in another way, remote desktop is supported to access the controller too.

3.1.1. Monitor Interface

LNX-900M has both HDMI and VGA interface, those two type of interface is used to connect monitor according to the type of monitor.

3.1.2. Mouse and Keyboard

LNX-900M has two USB3.0 interface and two USB2.0 interface, those USB ports can be used for connecting the mouse and keyboard.

3.1.3. Remote Desktop Interface

If it is not suitable for using monitor mouse and keyboard at project, Can use PC to access device by using remote desktop. When the configuration operation is completed, the remote PC can be removed, and the controller will operate normally as be configured.

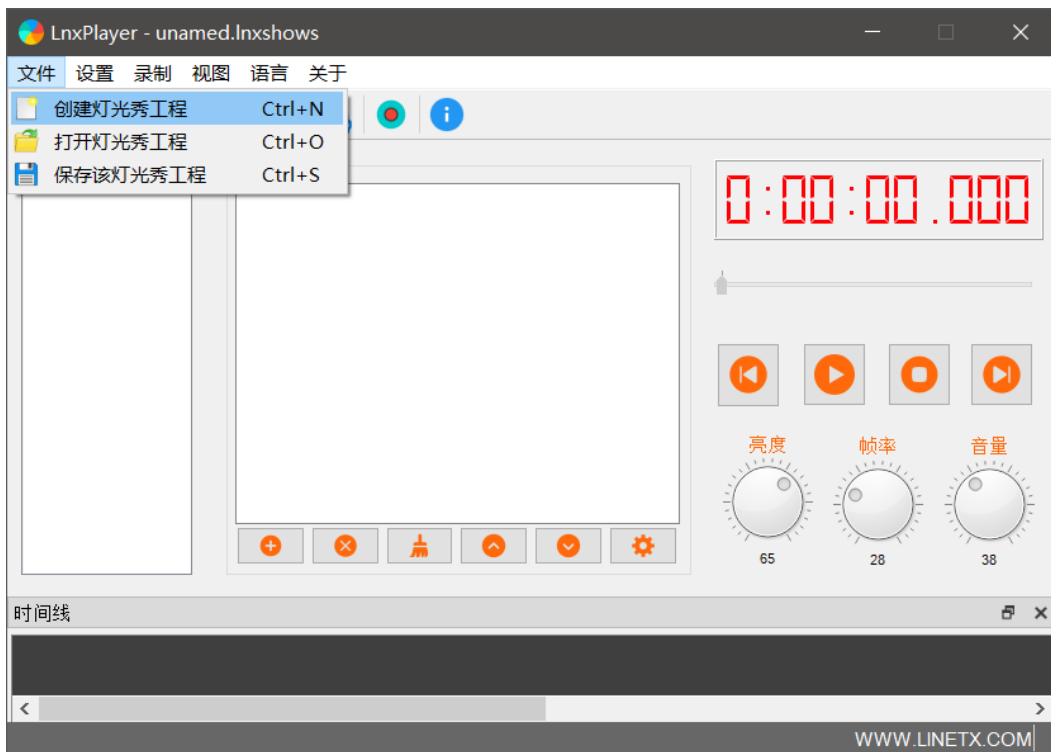
The password of LNX-900M remote desktop is “linetx2020”, Enter the IP, Hostname and password in the remote desktop dialog, then will success to access the desktop of LNX-900M

3.2. Configure LED Lighting Show

LNx-900M use LED show project to manage the LED lighting. LED show project contain several lighting shows, and cue file (effect file generated by LnxEffect or recorded effect file) can be added to the show. Double-click the show in the list to load the show; after loading the show, double-click the cue file in the Cue file list to play it.

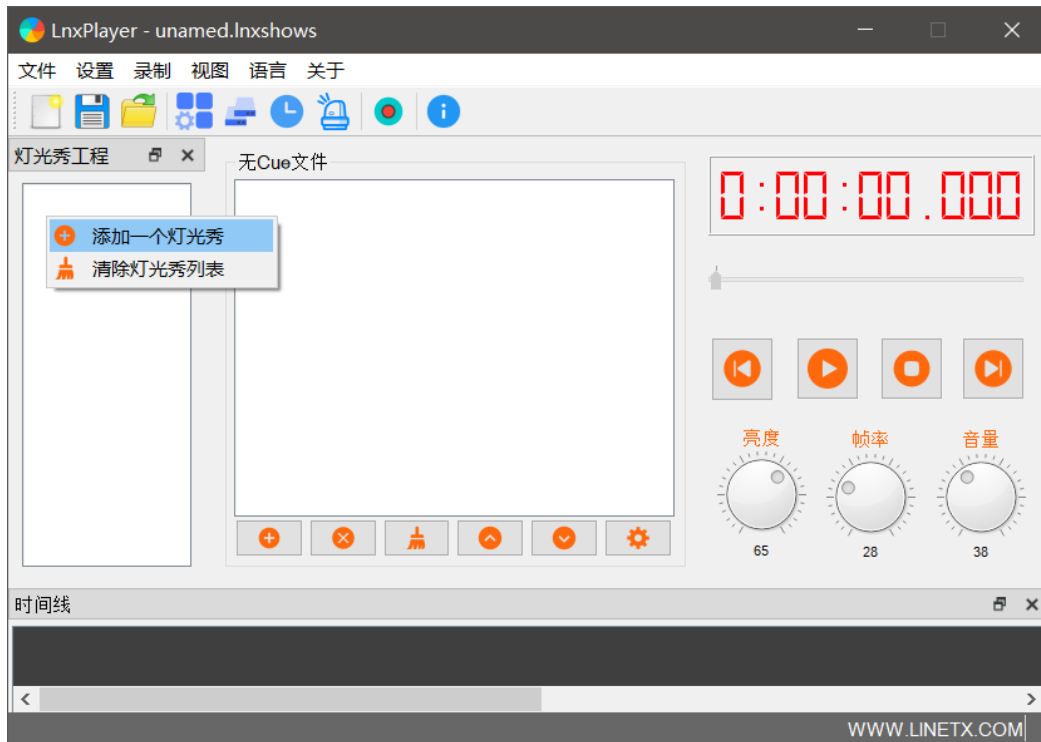
3.2.1. Create LED Show

As showed below, click the [File]->[Create Light Show], then a new project will be created:



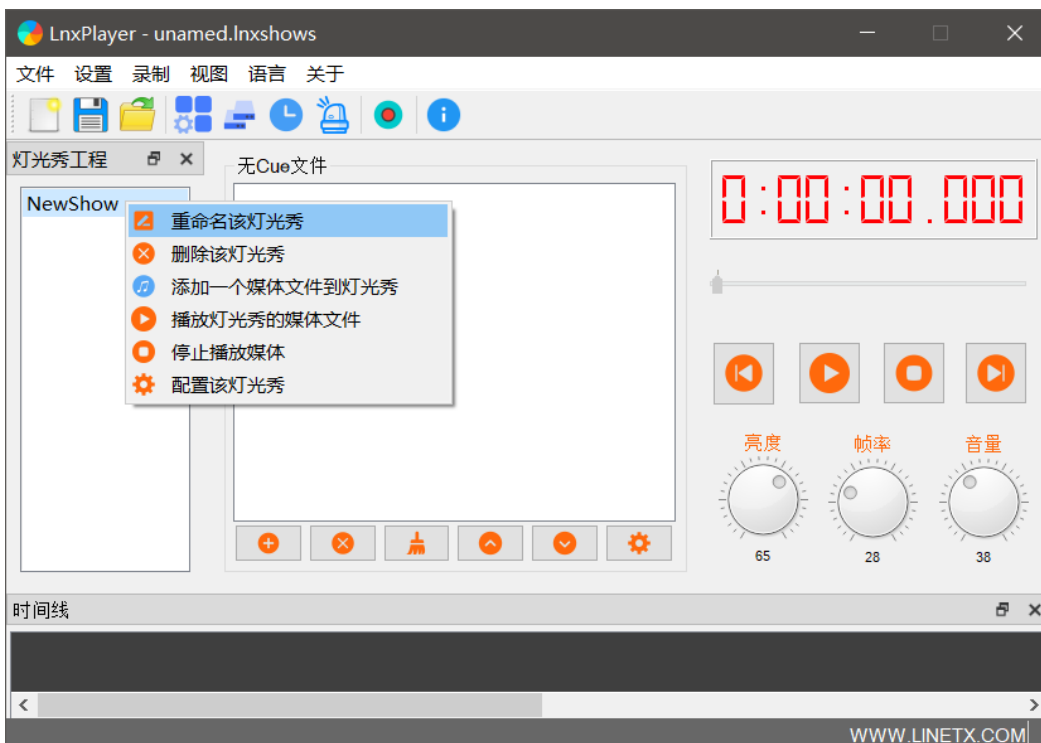
3.2.2. Add LED Show to Project

Left mouse button to select the show, right click and select [Add a light show] in the pop-up menu to add a new light show to the project. Click [Clear light show project] to clear all the shows in list.



3.2.3. Properties of the LED Show

In the show list, right click the mouse button, and the configuration menu will pop up. In this menu, rename or delete the show or do other configuration, as shown below:



The configuration items of this menu are shown in the following table:

Table 3-1 Configuration items

ID	Item	Description
1	Rename	Change the name of the light show.
2	删除该灯光秀	Delete this show.
3	添加一个媒体文件到灯光秀	Add an audio file to the show. After this, the audio can be used to synchronize to playing of effect file.
4	播放灯光秀的媒体文件	Play the audio file linked to the show and generate the local time code.
5	停止播放媒体	Stop playing the audio linked to the show
6	配置该灯光秀	Configure the properties of the light show, please refer to chapter 3.2.4 for detail

3.2.4. Configure LED Show

Click the [Configure this light show] menu of the light show, the dialog show as follows:

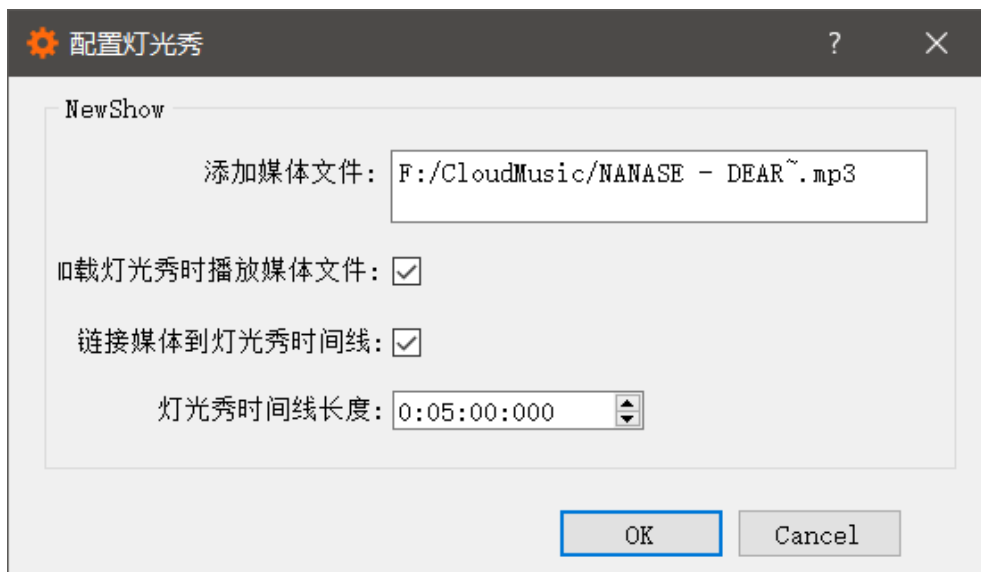
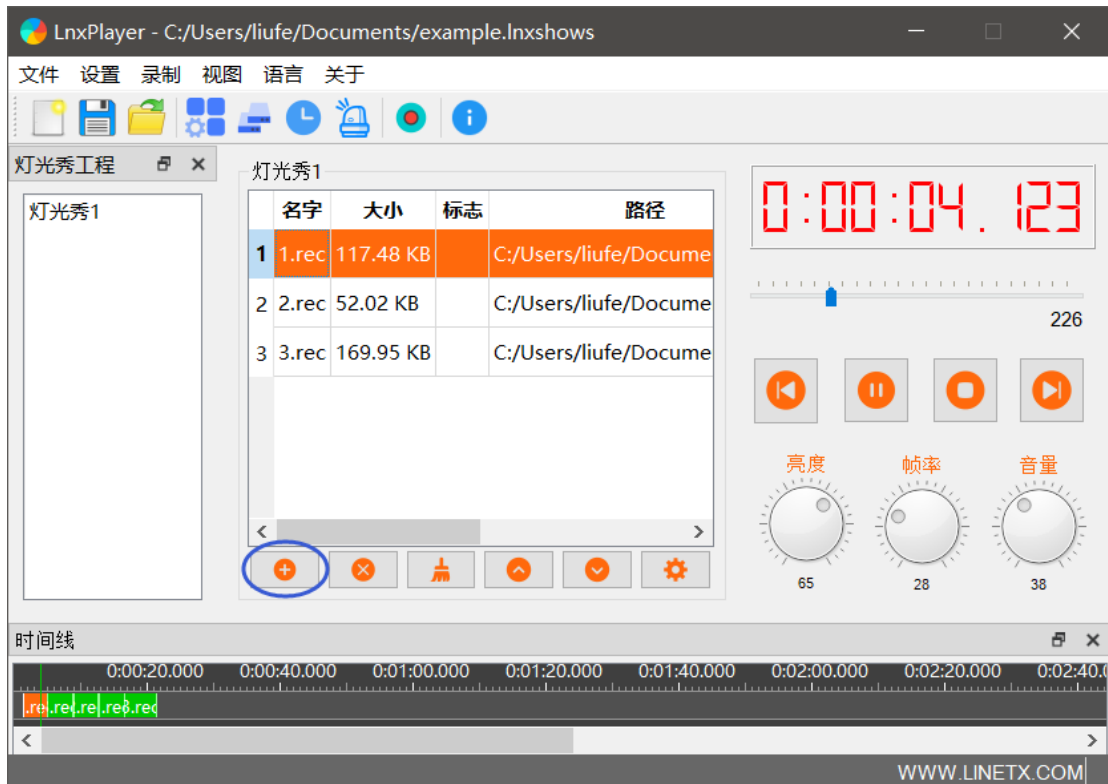


Table 3-2 Configure light show

ID	Item	Description
1	添加媒体文件	Show the path of the audio file linked to LED show
2	加载灯光秀时播放媒体文件	When double-click the LED show, the show will be loaded. Enable to play the linked audio file while loading the light show
3	链接媒体到灯光秀时间线	Link the show to the timeline of audio, Only enable this there could edit the time slice in the timeline.
4	灯光秀时间线长度	Specify the duration of timeline

3.2.5. Load LED Show

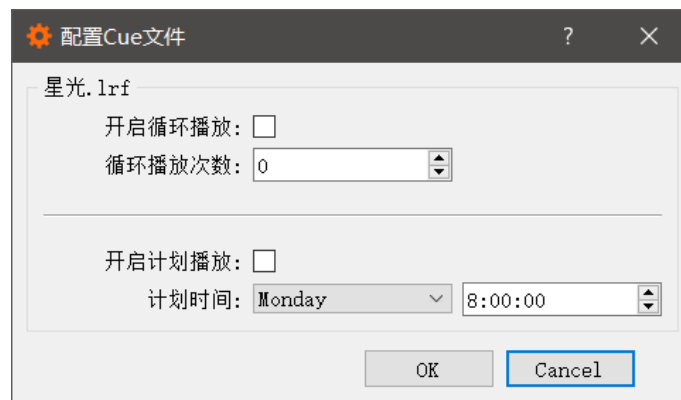
After loaded the LED show, click [Add CUE file to list] in the Cue list, and in the dialog, add multiple Cue files to the light show, showed as below:



There can delete, clear, move up, move down, and configure the Cue file. Hover the button using mouse pointer to get the operate tips.

3.2.6. Configure Cue File

In the cue file list, click the [Configure the Cue File], and a dialog will pop up, as shown below:



In this dialog, you can configure various attributes of the cue file, as shown in the following table:

Table 3-3 Configure Cue file

ID	Item	Description
1	开启循环播放	When loop playback is turned on, the Cue file will restart while reach the end.
2	循环播放次数	When the [Enable Loop Play] option is checked, this can set the number of looped play times, 0 means infinite loop, when reached the loop playback times, the next cue file will be automatically active to play.
3	开启计划播放	Enable the scheduled playback, Play the effect file according to the scheduled time.
4	计划时间	Configure the time of the scheduled play.

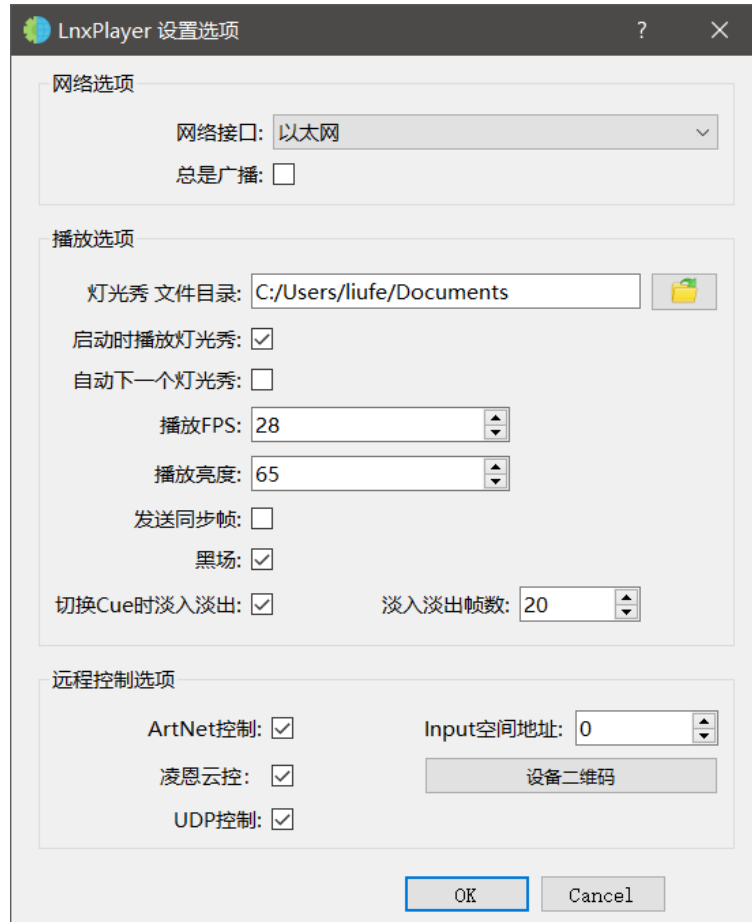
3.2.7. Save the LED Show Project

When the light show project is created and well configured, please click [File] -> [Save Light Show

Project] in the main menu to save the project to file , it can be configured to automatically load the project while power on.

3.3. Options

Click the main menu [Settings] -> [System Options], the options dialog is shown as below:



Configurable item as shown in the following table:

Table 3-3 Option Item

ID	Item	Description
1	网络接口	Config the network interface
2	总是广播	Config to use broadcast or unicast to send ArtNode data
3	灯光秀文件目录	Specify a directory that contains lighting show project. Then the project can be automatically opened and loaded when device power on.

4	启动时播放灯光秀	Config whether automatically start playing the light show project when starting up.
5	自动下一个灯光秀	Config whether automatically load next show to play after the previous show is finished.
6	播放 FPS	Specify the play FPS
7	播放亮度	Specify the play brightness
8	发送同步帧	Specify whether use ArtSync
9	黑场	Send black data when device is idle
10	切换 Cue 时淡入淡出	Fade in and fade out the effects when change the CUE files
11	ArtNet 控制	Specify whether to open ArtNet control
12	Input 空间地址	Specify the Universe address used by ArtNet control
13	凌恩云控	Specify whether to enable the LINETX cloud control
14	UDP 控制	Specify whether to enable UDP control function

3.4. Configure Timecode

LNx-900M supports the function of receiving and sending time code, use time code to synchronize the playback of effect Cue files.

In the main menu, click the [Settings] -> [Set Time Code] menu, and the time code dialog will pop up as follows.:

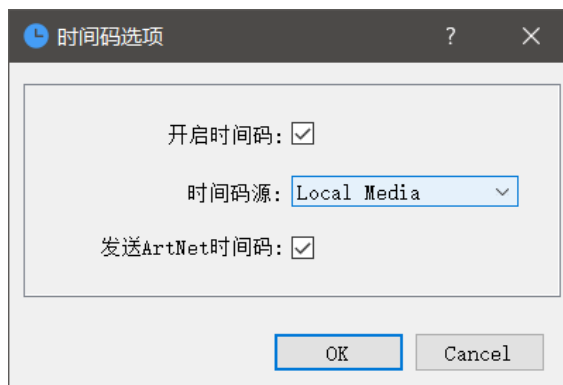


表 3-4 时间码选项条目

ID	Item	Description
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1	Enable Timecode	Click to enable the timecode
2	Timecode source	You can choose the local media time code (that is, the local audio media file linked to the light show), ArtNet external time code, or system time code. When there is a third-party audio playback device, and it has the function of sending ArtNet time code, you can choose ArtNet time code reception to synchronize the playback of local lighting effect Cue files.
3	Send ArtNet timecode	Click to select whether to send out the time code of the media when playing local media.

3.5. Music and lighting synchronization configuration

Using LNX-900M's music and lighting synchronization function, you can achieve the effect of playing a specific Cue lighting effect file synchronously at the time node of the music. By accurately grasping the rhythm of the music, adding the corresponding time slice, the lighting and music form an overall effect to show An audiovisual effect and feeling with sensory levels and integration.

3.5.1. Show timeline editing window

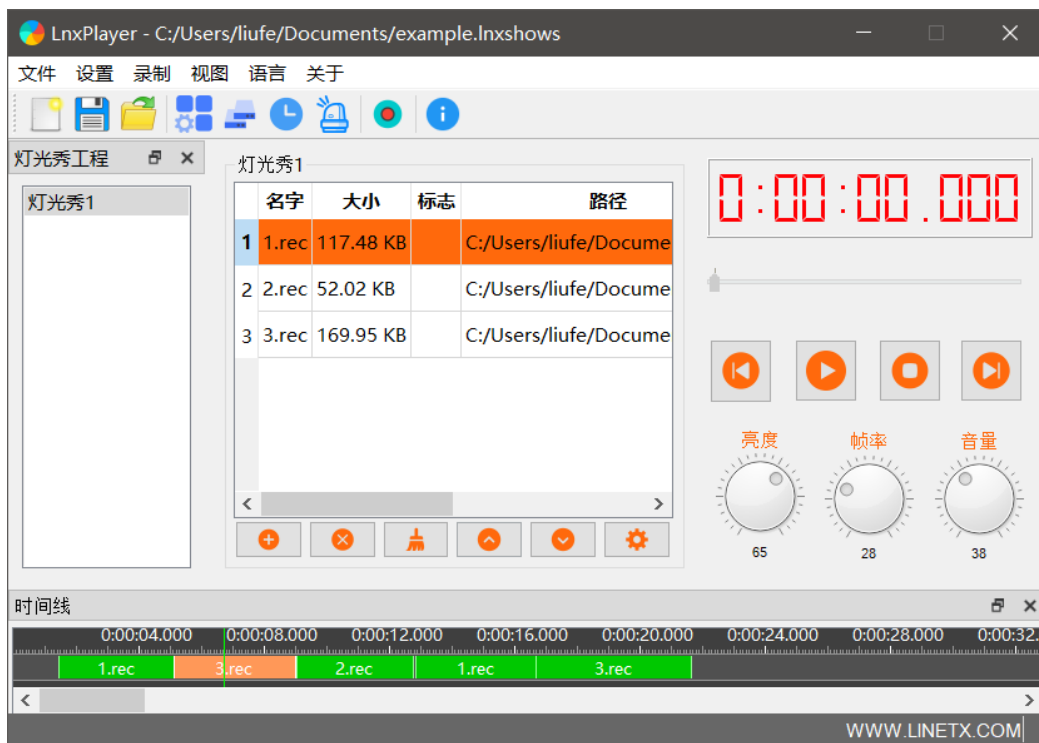
Click [View] -> [Show/Hide Timeline] in the window menu to switch between displaying or hiding the timeline window. When you need to edit the timeline, you must first display the timeline window.ss

3.5.2. Timeline editing

To edit the audio timeline, please open it as follows:

- a. Refer to section 3.4.1 to display the timeline editing window;
- b. Refer to section 3.3 to enable local media timecode
- c. Refer to section 3.2.3 to add a media file to the light show in the light show project and set the timeline length
- d. Refer to section 3.2.5 Double-click to load the light show

After these steps, you can add a time slice to the timeline window, as shown in the figure below:

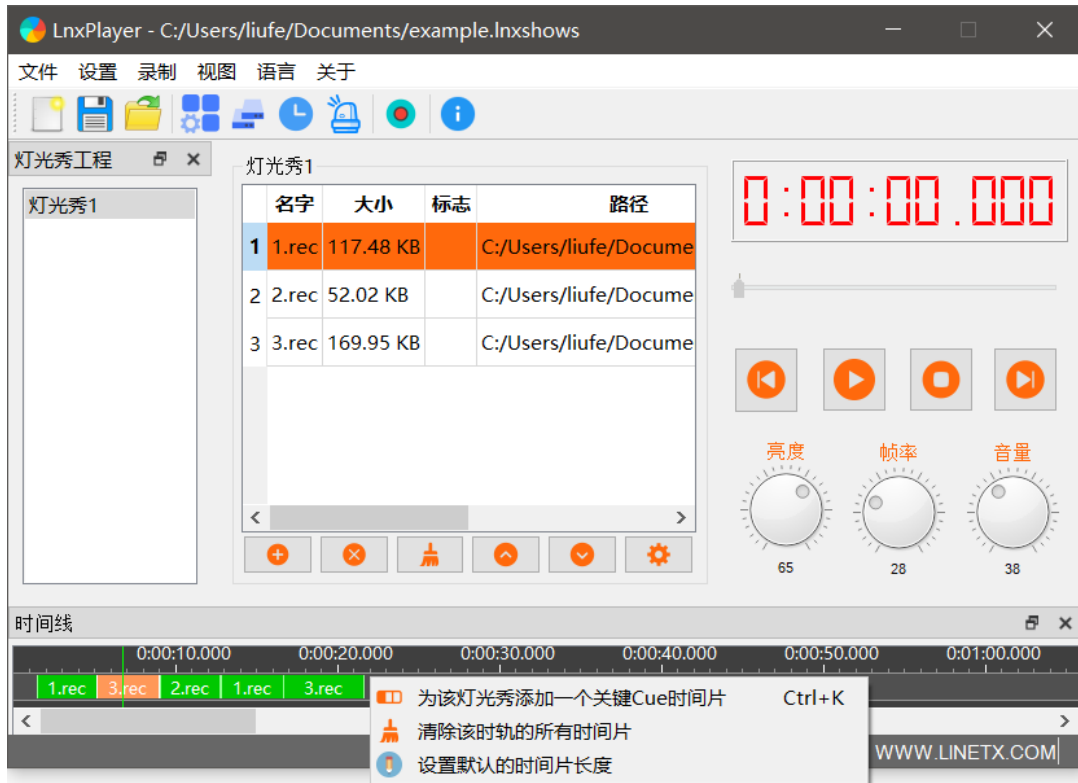


In the timeline editing window, scroll the wheel to zoom in or zoom out the scale value of the timeline, and press the right button to drag the timeline left and right.

3.5.3. Add time slice

In order to synchronize the time audio with the light, you need to add a time slice to the audio timeline. Each time slice can be assigned a light Cue file. When the media playback time reaches the corresponding time slice, the playback of the Cue file is started. Achieve the effect of audio-visual synchronization.

Click the right mouse button in the timeline window, and the operation menu will pop up as follows:



3-5 时间片配置条目

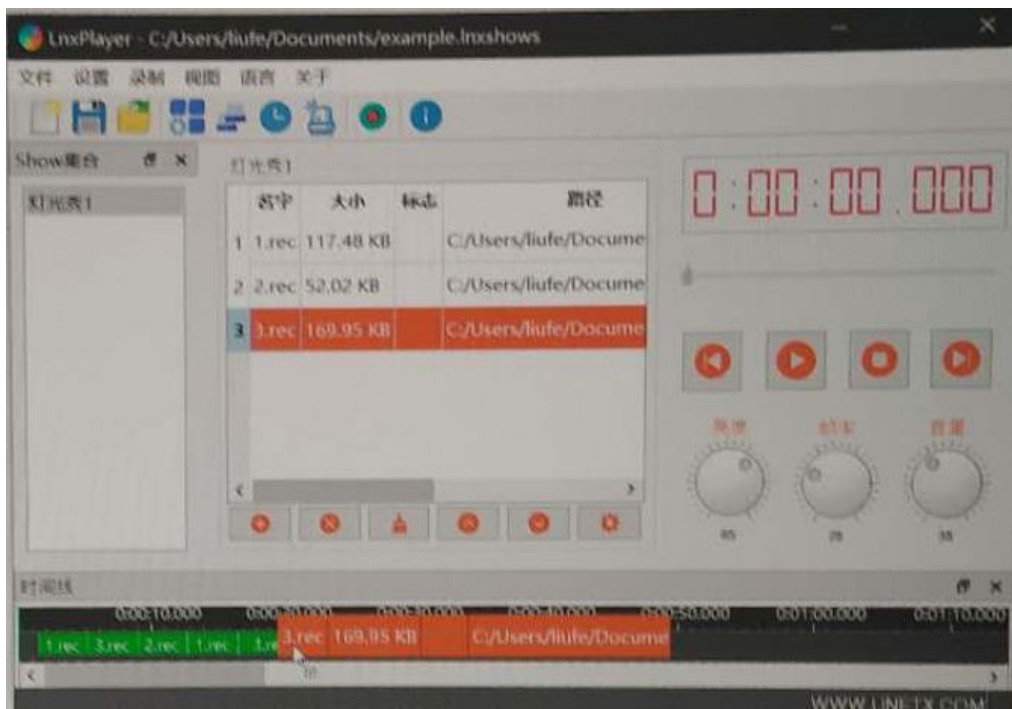
ID	Item	Description
1	Add a key Cue time slice to the light show	Click to add a time slice of the current time, see the third item for the length of the time slice. When the music is playing, you can press the shortcut key Ctrl+K to quickly add time slices, so that you can quickly add time slices at the required rhythm.
2	Clear all time slices of the time track	Delete all time slices of this timeline track
3	Set the default time slice length	That is, the default time slice length when adding a time slice, the length of the time slice can be adjusted by dragging the two ends of the time slice when needed.

Move the mouse to the corresponding time slice, click the right mouse button, and click the pop-up menu [Delete this time slice] to delete the corresponding time slice. Long press the time slice and drag left and right to quickly adjust the time slice in the time track. Position; move the device to both sides of the time slice, when the mouse pointer becomes a stretched pointer, long press and drag to adjust the time length of the time slice.

3.5.4. Specify Cue file for time slice

When a blank time slice is created, its color is gray, which means that the time slice does not specify any CUE file. Only by assigning a time slice to a CUE file can the playback of the CUE file be triggered in the time represented by the time slice.

You can quickly drag a CUE file to the time slice with the mouse to complete the specified action of the CUE file in the time slice, as shown in the figure below



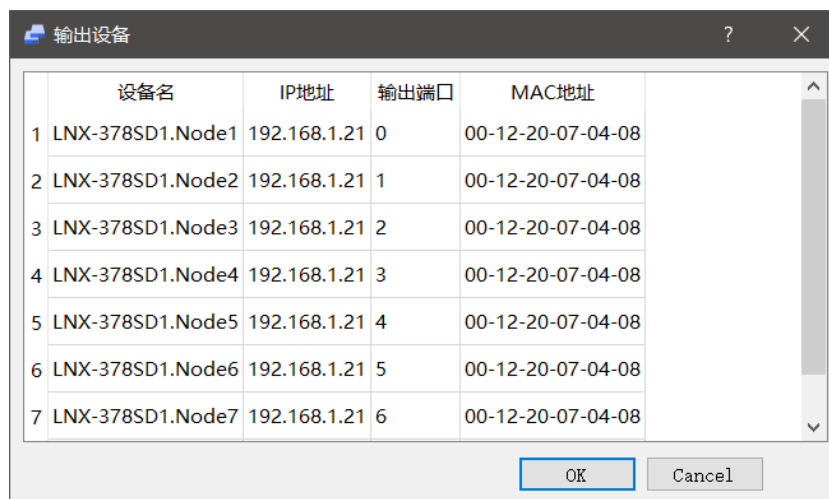
3.5.5. Play and adjust audio

When the CUE file of the time slice is specified, you can double-click the light show to play the audio and light effect files simultaneously. Click the left mouse button on the scale part of the time track to quickly adjust the audio playback time. If [Send ArtNet Time Code] is turned on, the ArtNet time code will also be sent out synchronously at this time for external device action synchronization

3.6. Output device

Click [Settings] -> [Output Devices] in the main window to view the current remote LED sub-controller output light control devices. Please note that LNX-900M only supports various types of LED sub-control devices of the Lingen series.

In the output device window, the searched device name, IP address, port address, MAC address and other information will be displayed, as shown below:



	设备名	IP地址	输出端口	MAC地址
1	LNX-378SD1.Node1	192.168.1.21	0	00-12-20-07-04-08
2	LNX-378SD1.Node2	192.168.1.21	1	00-12-20-07-04-08
3	LNX-378SD1.Node3	192.168.1.21	2	00-12-20-07-04-08
4	LNX-378SD1.Node4	192.168.1.21	3	00-12-20-07-04-08
5	LNX-378SD1.Node5	192.168.1.21	4	00-12-20-07-04-08
6	LNX-378SD1.Node6	192.168.1.21	5	00-12-20-07-04-08
7	LNX-378SD1.Node7	192.168.1.21	6	00-12-20-07-04-08

3.7. remote control

LNX-900M supports three external control interfaces, including ArtNet control, Lingen cloud control, UDP control, etc.

In ArtNet control mode, LNX-900M will become an ArtNet Node device, which can control the device by using an ArtNet spatial data

In the Lingen cloud control mode, the LNX-900M can be connected to the Lingen cloud control platform via the Internet, and the device can be remotely controlled from any place with a network through the Lingen APP on the mobile terminal

In UDP control mode, LNX-900M receives and processes network UDP data packets, and manages and controls the device by parsing UDP data packets