Quick Start Guide

CUBE X1

NDI High Bandwidth+NDI|HX

Distribution System

(V3.1)

Through this manual, you can learn:

- Packing list
- Device interfaces and functions
- Device connections, login, and basic applications
- Device upgrades and restore the factory settings

Before using this product, it is recommended that you read the guide carefully. To ensure your personal safety and avoid physical or electrical damage to the device, please strictly follow the instructions of this guide to install and use it under the guidance of professionals. Incorrect electrical connections or physical installation may cause permanent damage to the device and even threaten personal safety.

As the product is continuously upgraded and updated, the product you purchased may have some changes compared to the content in this manual. Please refer to the actual product inside the packaging box for the most accurate information.

1. Packing List

(1) Host Machine×1

(2) Power Adapter×2

(3) Warranty Card×1

(4) Quick Start Manual×1

2. Device Interfaces

(1) Touch Screen
(2) Power On/Off
(3) Numeric key
(4) Power Indicator Light
(5) 2*Power Port
(6) Grounding Port
(7) Line IN
(8) Line OUT
(9) HDMI Expansion Port
(10) 1000M Ethernet Port
(11) 2*USB Expansion Port
(12) 2*10G SFP+

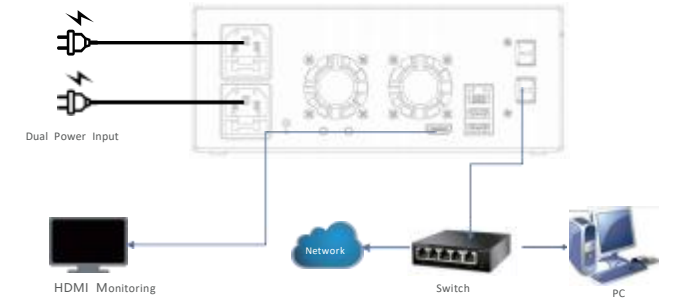
Notes:

- The number keys correspond to the 16 signal sources input into CUBE X1. Select any NDI output channel on the touch screen, and then press any number key to switch the NDI output to the NDI source corresponding to the number key.

3. Device Indicator

	Device Indicator			
	Name	**Color**	**Status**	**Remark**
Power Indicator	PWR1	Red	On	Power connected
	PWR2		Off	Power off or failure

4. Connections



Notes:

CUBE X1 primarily solves the problem that the NDI sources cannot be pulled by the devices at the same time, and the video source can be virtually output through CUBE X1. Cube X1 supports NDI High Bandwidth and NDI|HX input, compatible with any NDI output, either from any other software/hardware.

- When CUBE X1 receives an NDI video source in NDI|HX format, its virtual output remains NDI|HX. After changing the video source to NDI High Bandwidth format will result in an NDI High Bandwidth output.
- For compatibility reasons, it is recommended to use the same brand and type of optical modules for both the optical port of device and the optical port of switch. For distances within 500 meters, multi-mode optical modules can be chosen, while distances more than 500 meters are recommended to use single-mode optical modules.
- The device is equipped with two 1G/10G optical ports, which can be connected to the network for NDI input and output if necessary.

5. Touch Screen Settings

After pressing the power button on the right side of the CUBE X1 panel, the device will enter the power-on status and the KILOVIEW logo will be displayed on the screen. Please wait patiently for the startup process to complete.

5.1. System Overview

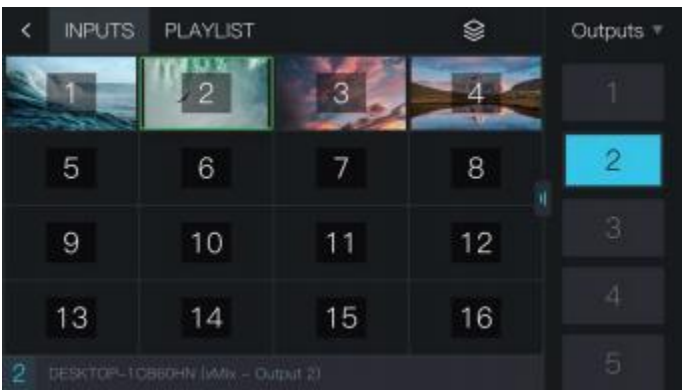
The first part on the touch screen is Dashboard. Click "Dashboard" to enter the system information page, which includes network status, system status, and other information.

5.2. System Control

The second module of the touch screen is system control. Click “Control” to configure.

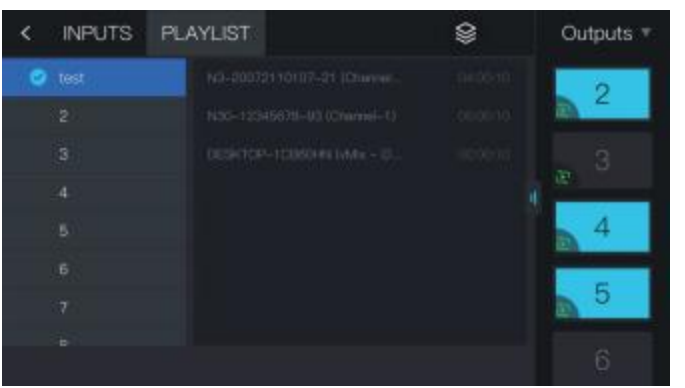
This interface allows users to view the video of the current NDI input source, set playlist, preset templates, view, and switch the corresponding relationship between NDI input and output. Meanwhile, it also supports turning on/off the VU meter of all NDI input sources.

The system will display all NDI input channels added by web page by default, and the output channels will only be displayed after adding them on the web page. When an output channel is added, it will be displayed on the screen. On the NDI output channel, the channel number and the status or icon of the playlist will be displayed to inform the user that the current NDI output channel is playing the playlist.



Double-click the NDI video source to enter the window to preview this video and click the "Back " icon to return to the interface of multiple NDI input videos, click the screen video, the name and channel number of the NDI input source will be displayed above the video. Clicking again will hide this information.

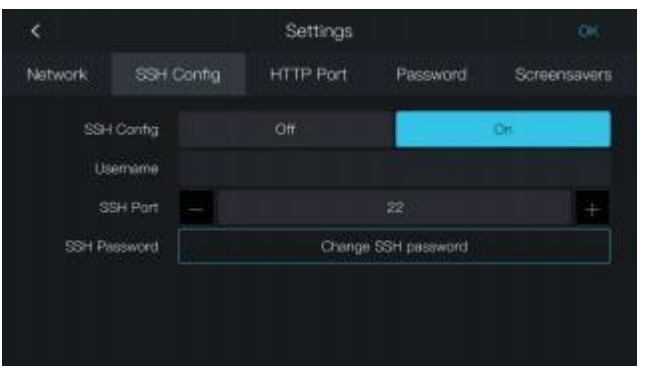
Up to 16 playlists and preset templates can be created, which can be switched by pressing the numeric buttons. Meanwhile, adding and deleting playlists and templates need to be done on the Web UI. The LCD screen can only be used for display, switching, playlist/template start and stop.



5.3. System Settings

The third part on the touch screen is System Settings. Clicking on "Settings" to enter the panel. You will need to enter the password to access (default password: 123456).
Configurations such as power off, reboot, and restoring to factory settings can be done here.

After accessing to the System Settings, you can set the network, SSH, HTTP port, system password and screen function.



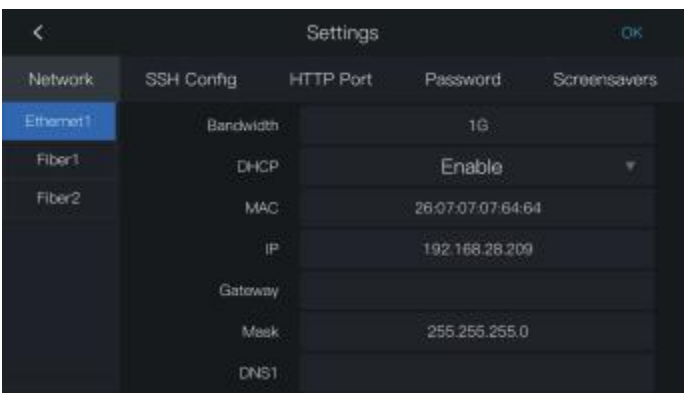
Notes:

- **Password Setting:** The System Settings module is not publicly accessible. Users need to enter a password to login. The default password is: 123456. After the first login, users are required to change the initial password.
- **SSH Control Setting:** When turn on SSH control, the default username is CUBEX1, the port is 22. Password: When the user clicks' Reset SSH password ', the system will automatically create a password. After the reset, a warning tip will be prompted: "Please keep your SSH password safe. If you forget it, you can modify it by clicking 'Reset SSH Password'". The password will not be displayed after the second view.
- **HTTP Port Setting:** Modification of the port is supported.

6. IP Address

By clicking the touch screen of the CUBE X1, System Setting>Network setting, users can view the IP address obtained by DHCP or set the IP address manually.

On this page, you can configure the IP address, Subnet, and Gateway for the network. The IP address will be used for WEB management after saving the settings.



Attention:

To ensure compatibility, it is recommended to use Chrome or Edge browsers to log in to the Web management page.

- For information security, it is advised to change your password immediately after your first login!
- The default login port for CUBE X1 is 80.

7. Login to The CUBE X1 Management Page

Method 1: Log in with Browser

To log in, you need to input http://ServerIP:Port number/ in your browser and get access to the CUBE X1 management page. The default username and password for the device are both "admin," and the default login port number is 80.

Method 2: Login in with the Touch Screen

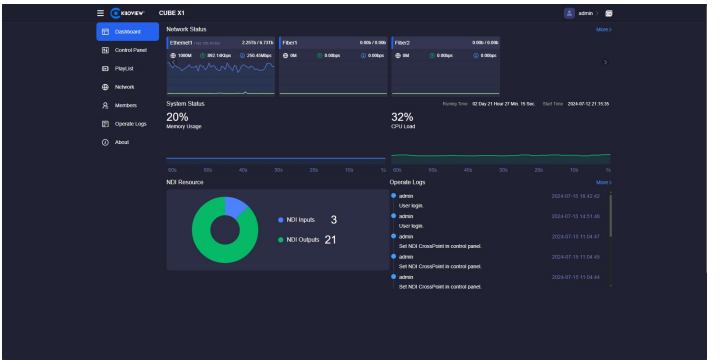
Click the "QR code" in the top right corner of the device's screen, scan the QR code displayed on the screen, and access the Web management page.

TIP: You need to activate the physical interface first, remember to plug in the Ethernet cable or fiber optic cable. Otherwise, scanning the code to obtain the default address of 127.0.0.1 will result in the inability to access the web management page.

8. CUBE X1 Management Page Settings

8.1. Dashboard

Click the "Dashboard" on the left side of the management page to check the system information. It displays information including network status, system status, NDI resources, logs, etc.



Notes:

Network Status:

- Fiber: The name of the NIC (Network Interface Card) on the CUBE X1 server, different information will be displayed based on different NIC.
- 65.81G /2.05T: Total upstream and downstream traffic of the current NIC.
- : Maximum bandwidth of the current NIC. : Real-time outgoing traffic of the current network. : Real-time incoming traffic of the current network.

NDI Resources:

- NDI Inputs: The number of all the NDI video sources added by users
- NDI outputs: The number of all the NDI output channels created by users.

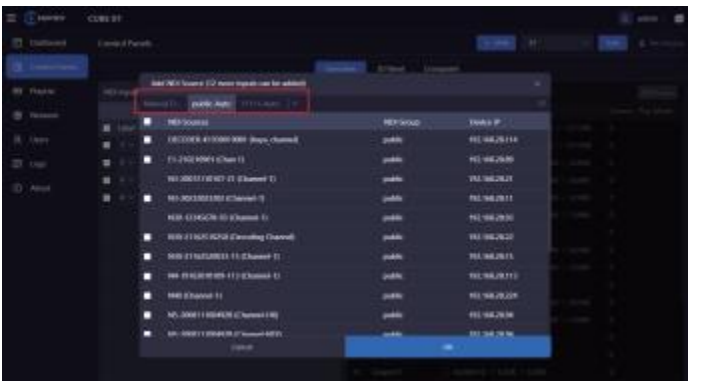
8.2. Control Panel

On the left side of the management page, click "Control Panels" to enter the Panel Settings, users can add and manage NDI input and NDI output.

Step 1: Adding NDI Video Sources

After clicking the "Panel" button for NDI inputs in the panel, a dialogue box for adding NDI sources will be prompted. Only when the sources that are added as NDI input can be controlled by the panel.

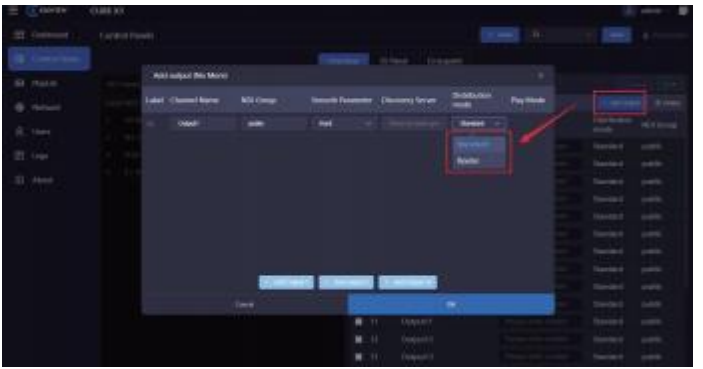
By using the "public-auto discovery" it will automatically discover all NDI sources in the local network and also in public group ("public"). You can select the desired NDI video source to add by choosing from these automatically discovered sources.



Step 2：Creating NDI Outputs

Users can create NDI virtual outputs and select the output NDI video sources by selecting the NDI input sources or playlist, and CUBE X1 also supports a single NDI source input, then output with multiple channels.

Click on the "Manage" button in the NDI output section to enter the NDI Output Management page. On the management page, click "Add Output" to create an NDI output channel. When establishing an output, users can choose different distribution modes, including Standard and Router mode.

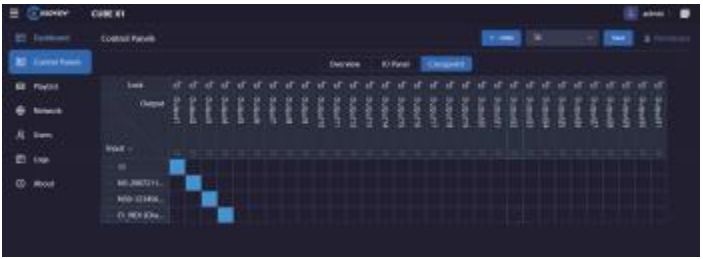


Notes:

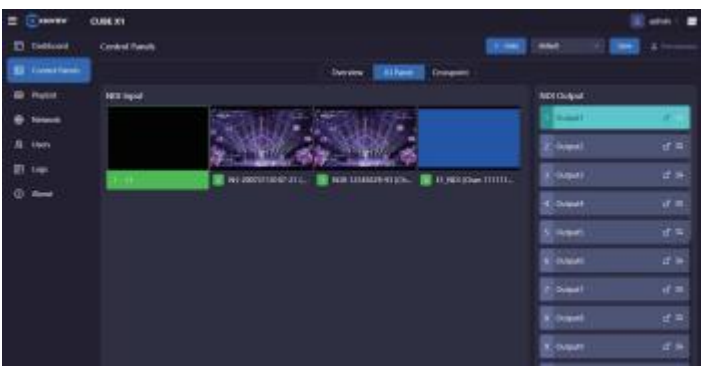
- Channel Name: The name of the NDI output channel, allowing a combination of text, numbers, and symbols. Multiple NDI output channels can be created.
- CUBE X1 supports a maximum configuration of 16 NDI input sources and 32 NDI output sources.
- Standard Distribution: CUBE X1 distributes NDI streams based on a "Replicate-forward" mode. This mode fully utilizes the server system's processing capability and high network throughput performance to achieve an "Amplifier" effect for NDI streams. It meets the demands of a large number of concurrent connections from NDI clients and reducing the access pressure on NDI source devices.
- Router Distribution：This is based on the NDI Routing mode, where NDI destination connect to the NDI sources through CUBE X1.

Step 3: Creating Input-Output Matrix

Use the "Cross-point" mode on the panel to create the matrix between NDI inputs and outputs. The blue block indicates that the corresponding NDI input is outputting from the corresponding NDI output channel.

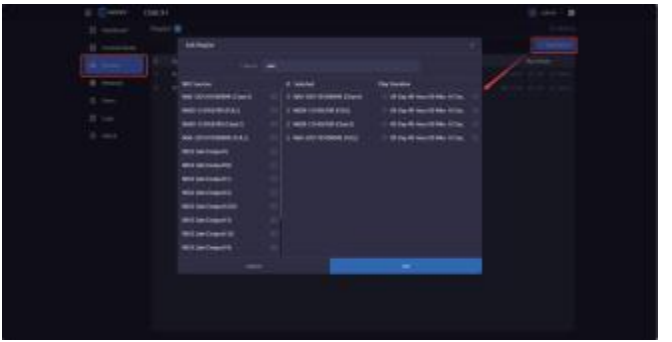


The "IO Panel" is a different display mode, and all operations have the same effect as the "Cross-point". e.g.: If you click Output1, you will see the first NDI source being highlighted in green, which indicating that this NDI video source is being output from Output1. Then if you click another video source, it will immediately turn green, and it will be seamlessly switched to be output from output1.

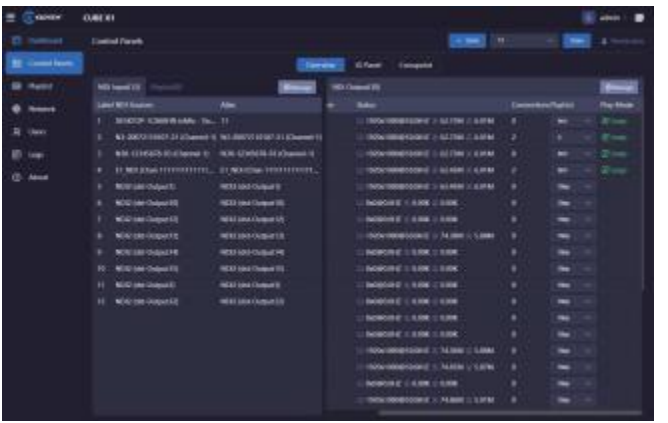


8.3. Playlist

On the left side of the management page, by clicking Playlist > Add playlist, you can customize the content of playlist and set the NDI source of playlist, duration, and other information.



Meanwhile, NDI input and NDI output matrix can be configured in the panel, the panel provides the option to switch between the Cross-point and IO panels for configuration. It also supports configuring single-cycle and loop play for the playlist and other functions.



Notes:

- Overview: Click the "Manage" buttons in NDI inputs and NDI outputs to add NDI sources and NDI output channels for the current panel.
- NDI Input Source Status: Displays the resolution, frame rate, and real-time bitrates of the NDI video sources.
- NDI Output: Shows the NDI output channels. When devices pull streams from a specific output, the output status displays the decoding resolution, frame rate, video, and audio bitrates.
- Playlist: When an NDI output channel is set to playlist, the playlist will display all the NDI input sources under this mode. When the video is being played, a circle will appear to the right of the video source to indicate the time progress.
- Cross-point/IO panel: Use the "Cross-point" to configure the association between NDI inputs and outputs. The blue block indicates that the corresponding NDI input is output from the corresponding NDI output channel.

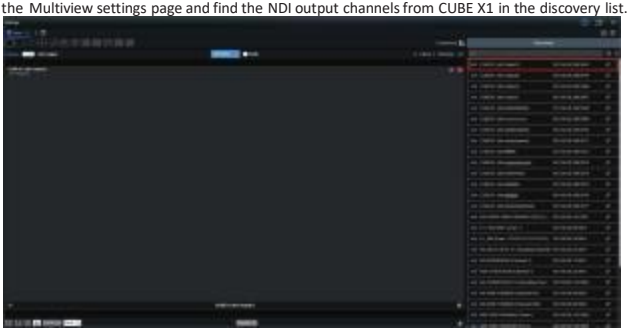
9. CUBE X1 Output

Download Kiloview Multiview free tools

Please Visit: https://www.kiloview.com/en/ndi/multiview, click [applying free experience], Get Multiview. Install the software step by step as prompted.

Kiloview Multiview is a highly acclaimed, free software tool for NDI video discovery, management, and multi-screen monitoring.

Open the Multiview settings page and find the NDI output channels from CUBE X1 in the discovery list.



Note:

NDI stream name rule of CUBE X1 Output: CUBE X1 (dst-channel name), the channel name refers to the NDI channel name when the user "Create NDI output".

10. Firmware Upgrade

10.1. Download the Upgrade Firmware

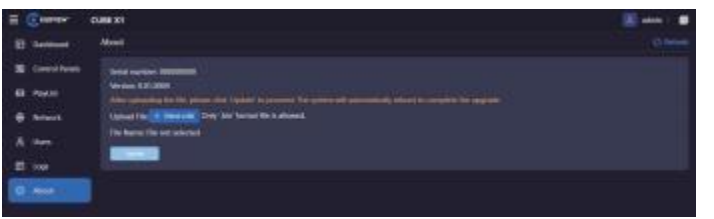
Kiloview will continuously provide firmware updates for CUBE X1 to add new features, fix bugs, and improve performance. Please visit:

https://www.kiloview.com/en/support/download/

In the filter list, select "NDI" > "CUBE X1"and find the latest firmware download under the "Software" tab.

10.2. Upgrading Device Firmware

Log in to the device management page and click on "About" > "Select a file" > "Update" to access the firmware upgrade page. Upload the firmware file downloaded from the official website and click "Update". Normally, the system will prompt you to restart after a successful firmware upload. If you want to restart, click "OK". If the system restarts automatically, please wait patiently.



TIP:

The baseline version for upgrading Cube X1 0.01.0085 in the web backend needs to be 0.01.008 or higher, otherwise it cannot be directly upgraded from the backend and needs to be manually upgraded; Please consult KiloView's technical support engineer for the manual upgrade process of Cube X1 versions before 0.01.0008;

11. Restore Factory Settings

If the device cannot work due to incorrect parameter configuration, you can try to restore the factory setting.

This can be done via the touch screen on the front panel of the CUBE X1, **System Settings>Restore**.

Note: After a factory reset, the following parameters will be changed to the default values:

- The login user "admin" password will be reset to "admin".
- Your device will revert to the default mode of dynamically obtaining IP addresses by DHCP, and the IP address may change.
- All device configuration parameters will be reset to the default values.

12. Others

If the device is not in use for a long period, it is recommended to unplug the power and store it properly to prolong its lifespan.

The multicast function of Cube X1 version 0.01.0085 has been hidden and needs to be tested. Please contact the market agent and sales personnel to request a temporary version;