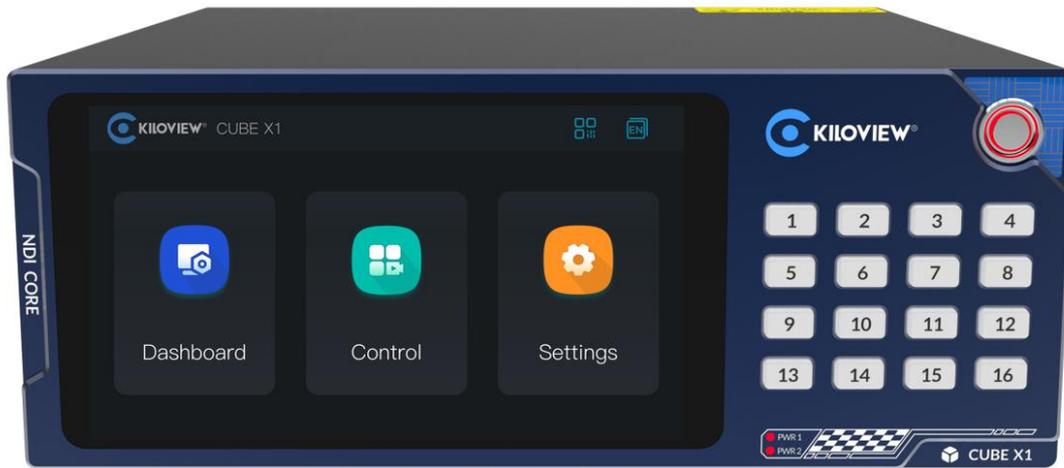


Kiloview CUBE X1



Kiloview CUBE X1 is a small embedded server designed for routing and distribution of NDI video streams. The CUBE X1 features an eight core high-performance ARM64 processor, equipped with two 10 Gigabit fiber SFP Ethernet interfaces and one Gigabit RJ45 Ethernet interface. Its powerful processor performance and network throughput enable it both to handle up to 13 channels of NDI High bandwidth or NDI | HX2 or NDI | HX3 1080P60 NDI stream inputs and to provide no less than 26 channels of NDI network distribution outputs at the same time.

CUBE X1 is built on the core of Kiloview's mature NDI CORE server system, CUBE X1's distribution of NDI streams is based on a "copy-forward" mode as well as NDI CORE. The "copy forward" mode can fully utilize the processing power and high network throughput performance of the server system, achieving the "amplifier" effect of NDI flow, meeting the needs of a large number of NDI clients for concurrent connections, and reducing the access pressure on NDI source devices. Users can also definitely configure CUBE X1 to work in the conventional NDI Routing mode, which is the "jump" mode ①.

CUBE X1 is compact and powerful. Two units of CUBE X1s horizontally assembled together are equivalent to the size of standard 2RU. Kiloview provides an optional bracket attachment RC02 frame for assembling the two devices together. In the compact chassis structure, the CUBE X1 provides redundant dual backup power supply, a 5.5-inch front LCD touch screen panel, and fast switching buttons on the front panel. Moreover, CUBE X1 has extremely low power consumption and good heat dissipation design, even when operating at full load, its overall power consumption does not exceed 20W. The compact structure,

superior performance, low power consumption, redundant power supply, and carefully designed cooling system can ensure a 7x24 hours' operation, which is stable, reliable, and environmentally friendly.

Through free software updates at later stage, CUBE X1 is able to support more extended features, such as building clusters with multiple CUBE X1 to achieve larger scale NDI routing distribution.

Function features

1. Input, output & forwarding of High performance and full capability

NDI

- Support inputs of 16x NDI High bandwidth, NDI | HX2, and NDI | HX3.
- Support up to outputs of 32x NDI forwarding②.
- The forwarding delay is less than 16.67ms which brings no conversion, damage, or loss to NDI media contents.
- support NDI full protocol and full format ; However, the total number of supported video paths depends on the bandwidth due to the different NDI bandwidth under different video resolution formats. In typical cases, NDI High bandwidth or NDI | HX2/NDI | HX3 with a resolution of 1080p60 can support 13x inputs and 26x outputs; At a resolution of 4Kp60, the scale is halved.
- Support forwarding of NDI Tally status.
- Support the forwarding of signals of NDI PTZ control .
- Support bi-directional forwarding of NDI metadata.
- Support user configurable traditional NDI Routing mode, namely "jump" mode.

2. Convenient operation and good interactive experience

- The 5.5-inch LCD touch screen on the front panel allows to preview all inputs of NDI videos (in VU Meter mode).

- The switching operation between NDI input and output can be performed through touch screen selection and front panel buttons.
- Commonly used NDI output channels can be added to the favorites list for quick selection.
- The LCD screen on the front panel allows to view the operating status of the host, system performance, and network uplink/downlink bandwidth.
- The commonly used system settings can be executed through the front panel LCD screen.
- Remote backend control can be achieved through the Web console.

3. Powerful functions of Web console management and control

- Safe web access based on HTTPS.
- Support real-time preview of NDI input videos on the web.
- Provide various forms of interfaces of input-output switching control such as intersection points and I/O panels.
- ●A freely saved preset template (i.e. saving all corresponding input-output states), and easy access to quick operation with just one click.
- Support customized patrol switching function (carousel list function), the source, the interval time, and the order of patrol switching can be freely defined.
- Free selection of NDI inputs and free defined NDI outputs.
- Support NDI automatic discovery, manual discovery, and Discovery Server.
- User and permission management.

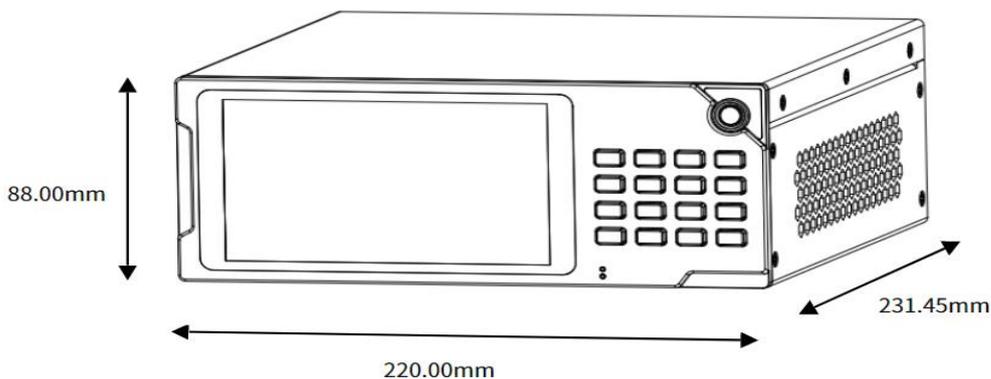
4. Flexibility and scalability

- Permanent free upgrades for softwares, allowing more extension of future features.
- More features are subject to official announcements.

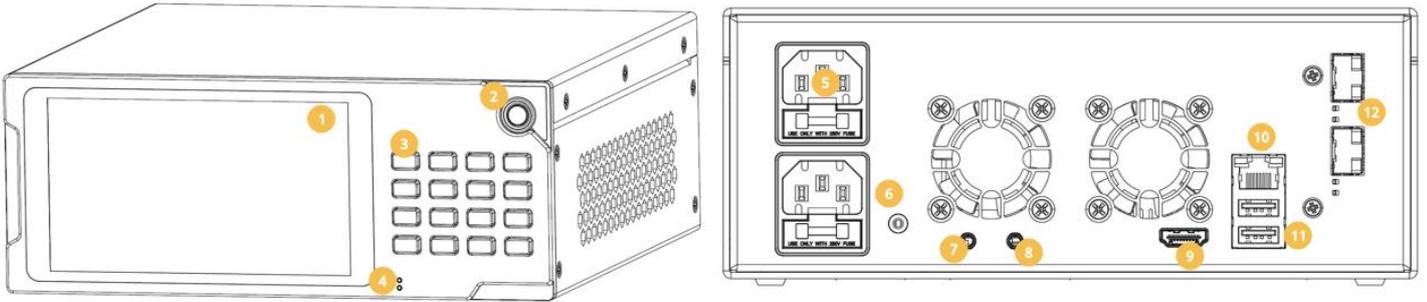
5. Compact, highly reliable, and low-power embedded hardware servers

- 8-core ARM64 high-performance processor.
- Equipped with two 10GbE SFP+Ethernet ports and one Ethernet port with 1GbE RJ45 .
- Redundant dual backup power supply.
- Half width size of 2RU standard rack, two CUBE X1 can be horizontally assembled to form a standard 2RU rack size, and Kiloview provides optional assembly bracket attachment RC02 frame.
- Equipped with a 5.5-inch touch screen and 16 dual color numeric buttons.
- Equipped with two USB 2.0 interfaces, which allows the plug of a mouse, a keyboard to switch input/output, or of a USB flash drive for system upgrades.
- The power consumption of the entire device do not exceed 20W when working at full load, and it also provides with an intelligent active cooling design.
- Reinforced structural design with good seismic and anti drop performance.

CUBE X1 Product dimension Diagram

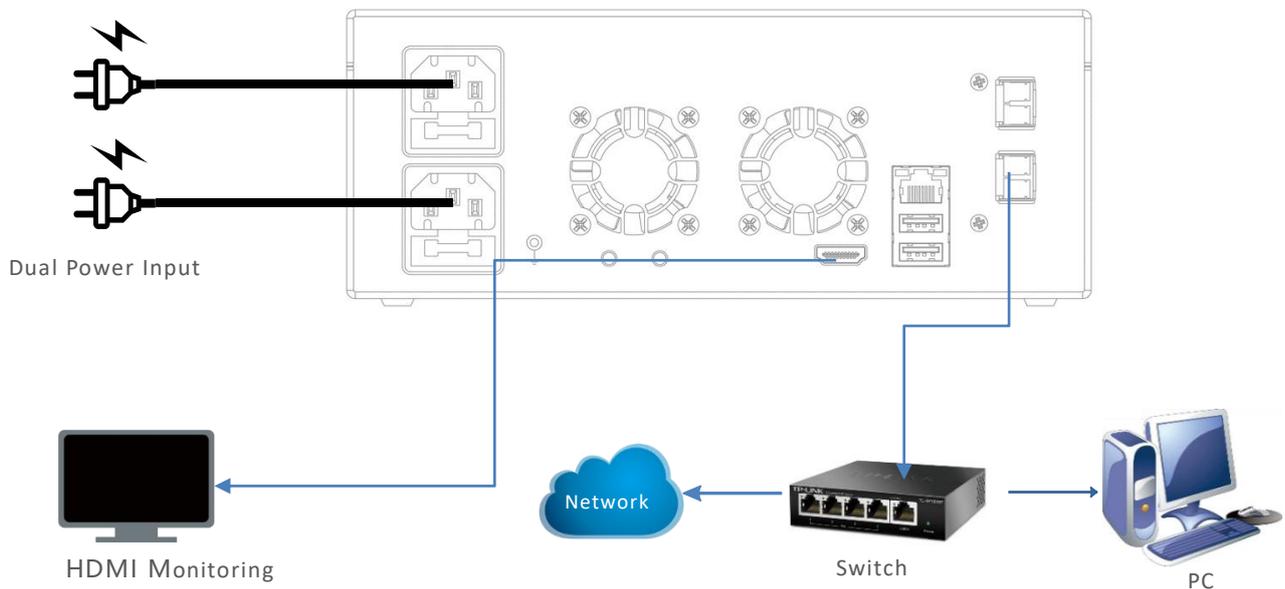


CUBE X1 Device Interfaces Diagram



- (1) Touch Screen
- (2) Power On/Off
- (3) Number 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+

CUBE X1 Connections Diagram



CUBE X1 Product parameters

Model	CUBE X1
Function and performance	
Video resolution support	Input support: 3840*2160p 60/59.94/50/30/29.97/25/24/23.98fps 1920*1080p 60/59.94/50/30/29.97/25/24/23.98fps 1920*1080i 60/59.94/50fps 1280*720p 60/59.94/50/30/29.97/25/24/23.98fps Output support: 3840*2160p 60/59.94/50/30/29.97/25/24/23.98fps 1920*1080p 60/59.94/50/30/29.97/25/24/23.98fps 1920*1080i 60/59.94/50fps 1280*720p 60/59.94/50/30/29.97/25/24/23.98fps
Processing capacity	Input: Up to 16x NDI High bandwidth or NDI HX2 or NDI HX3, with a total input bandwidth not exceeding 2.5Gbps; Output: Create up to 32x NDI output channels, with no more than 32 concurrent connections, and a total output bandwidth of no more than 5Gbps. Measure and evaluate the actual input/output capability based on the above input/output capabilities. Typical scenario: NDI stream with a resolution of 3840x2160 (4K), 340Mbps/channel: 5 inputs and 12 outputs NDI stream with a resolution of 1920x1080 (1080p), 180Mbps/channel: 13 inputs and 26 outputs
NDI Format support	NDI High-bandwidth NDI HX2 NDI HX3
NDI Tally	Support (forwarding)
NDI PTZ control	Support (forwarding)
NDI Metadata	Support (forwarding)
General parameters	
CPU	8-core ARM64 high-performance processor
Network interface	2x 10GbE SPF+fiber optic Ethernet interface; 1x 1GbE RJ45 Ethernet interface
HDMI interface	1x HDMI 2.0 OUT
USB interface	2x USB 2.0 (Type-A)
Audio input/output	1x 3.5mm LINE IN 1x 3.5mm LINE OUT
key	1x Power on/off button 16x Number buttons
Screen type	5.5 吋 LCD Capacitive touch screen display, display resolution 1920x1080@50Hz

Model	CUBE X1
source	2x AC 100~230V Redundant hot standby power supply
management style	Web
Overall power consumption	<= 20W
working temperature	-10°C - 55°C / 14°F - 131°F
Storage temperature	-20°C - 65°C / -4°F - 149°F
size	220.00 x 231.45 x 88.00mm
Net weight	1.88kg

CUBE X1 Product Parameter Table

- ① When NDI client connects to the output channel of CUBE X1, the output channel will notify the NDI client to redirect to the NDI source and reconnect.
- ② CUBE X1 can create up to 32x NDI output channels, and each channel can establish one or more NDI connections. The specific number of connections depends on the total network bandwidth and the overall performance of CUBE X1.