Your AV over IP Trailblazer

Data Sheet

3G-SDI & USB to NDI Encoder/Decoder

N5 v2.00

Product Description

The N5 3G-SDI & USB to NDI Encoder/Decoder is Kiloview's new-generation NDI video encoding and decoding (I/O) device. Powered by globally advanced AVC/HEVC video encoding and decoding algorithms together with NDI technology, the N5 delivers strong overall performance, excellent video quality, low-latency transmission, and a comprehensive feature set.

The N5 supports up to 3G-SDI (SMPTE 424M) and is compatible with HD-SDI (SMPTE 292M), enabling both SDI-to-NDI conversion (encoding mode) and NDI-to-SDI conversion (decoding mode). Users can freely switch between encoding and decoding modes based on their needs.

The N5 supports SpeedHQ as well as AVC (H.264) and HEVC (H.265) codecs, and enables simultaneous I/O conversion for both NDI High Bandwidth and NDI HX. In encoding mode, the N5 can output both NDI High Bandwidth and NDI HX video streams simultaneously, with resolutions up to 1080p60. In decoding mode, the device automatically adapts to either NDI High Bandwidth or NDI HX streams.

For professional applications such as broadcast production and medical imaging, the N5 supports YCbCr 4:2:2 color space with up to 8-bit color depth for NDI High Bandwidth encoding, as well as YCbCr 4:2:0 color space with up to 8-bit color depth for AVC (H.264) and HEVC (H.265) encoding, ensuring reliable color fidelity and image quality.

The N5 is equipped with a USB 3.0 Type-C interface. Leveraging USB 3.0 technology, the device supports USB webcams as video input sources for encoding, with resolutions up to 1080p. This allows users to seamlessly integrate NDI workflows into video conferencing, image processing, and other application scenarios.

A color LCD display and touch buttons are integrated into the front panel. The display provides quick access to device status, network data, IP address, and current encoding or decoding mode. It also supports real-time Tally indication, allowing users to stay informed

of live production status.

Like most Kiloview products, the N5 supports seamless integration with Kiloview KiloLink Server Pro. Through KiloLink Server Pro, users can centrally manage large numbers of N5 units and other Kiloview devices, monitor device status and network data in real time, and perform batch configuration and firmware upgrades.

Key Features

1. Core Encoding & Decoding Capabilities

- Supports bidirectional conversion between 3G-SDI video signals and NDI network video streams, with resolutions up to 1080p60 (1920×1080@60Hz);
- Supports simultaneous encoding output of NDI High Bandwidth and NDI HX streams, with real-time loop-through preview of the input signal;
- Automatically adapts to both NDI High Bandwidth and NDI HX streams during decoding;
- Provides reliable color and image quality, supporting YCbCr 4:2:2 color space with up to 8-bit color depth for NDI High Bandwidth encoding, and YCbCr 4:2:0 color space with 8-bit color depth for AVC (H.264) and HEVC (H.265) encoding.

2. Interfaces & Expansion

- SDI input/output, supporting loop-through monitoring during encoding or SDI output during decoding;
- Gigabit Ethernet with PoE support (IEEE 802.3at);
- USB expansion for PTZ camera control (Visca / Visca over IP / Pelco protocols);
- USB audio interface expansion, supporting Kiloview Intercom System group communication;
- Optional control cables available (custom PTZ protocols supported).

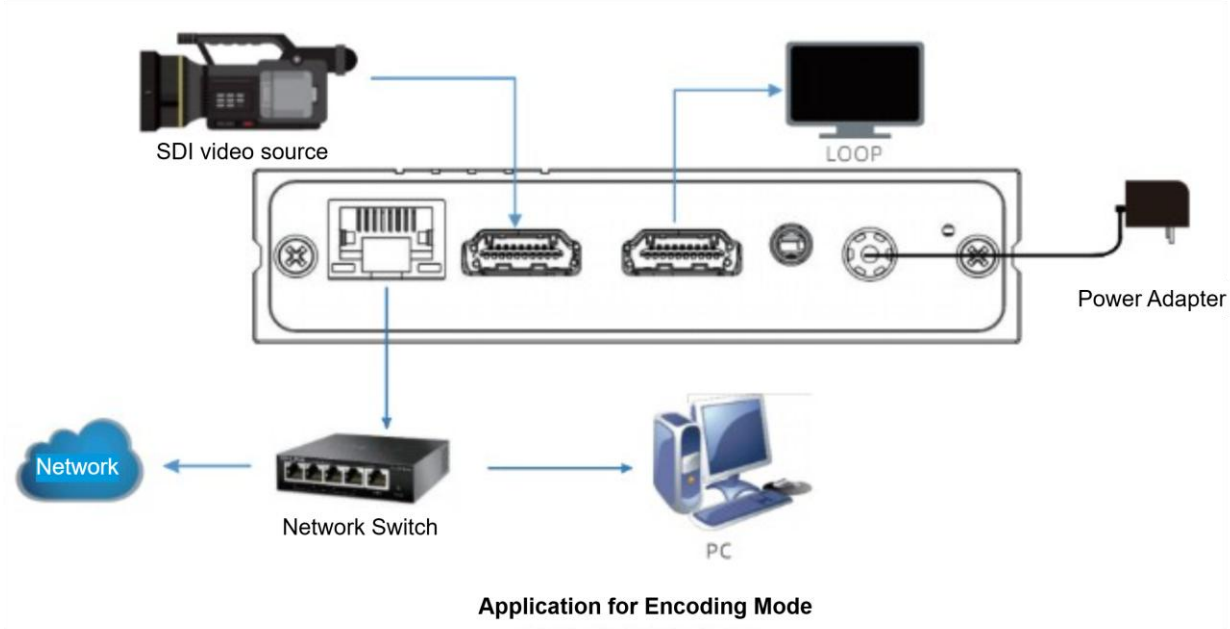
3. User Interaction & Design

- Color LCD display and touch buttons for intuitive operation;
- Front and rear Tally outputs for real-time shooting status indication;
- Compact and refined form factor for easy installation and portability.

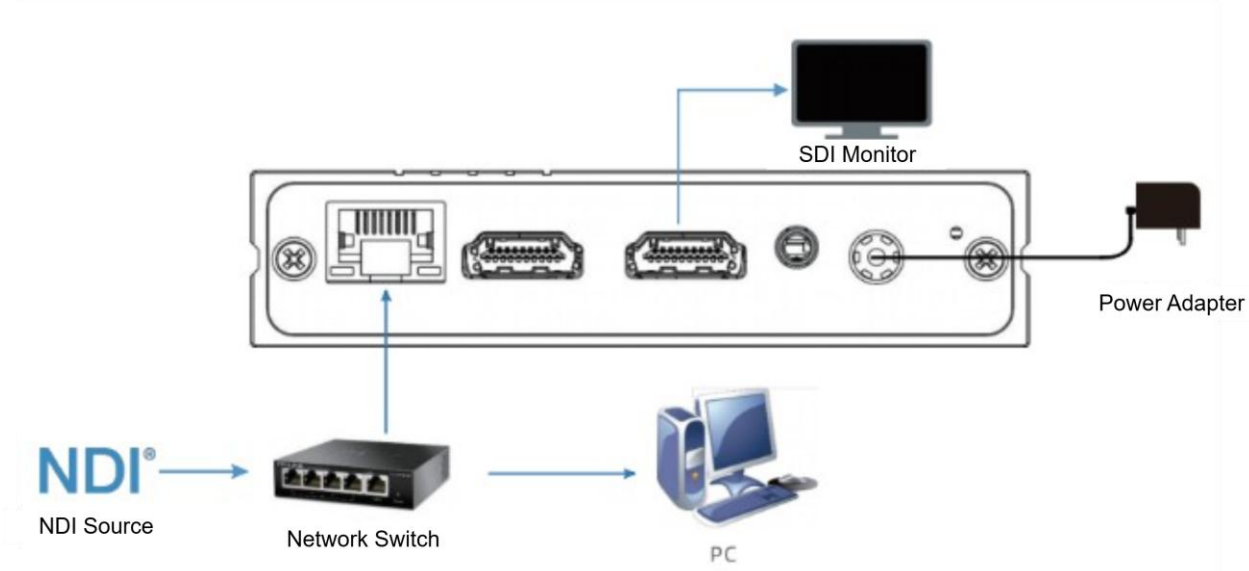
4. Kiloview Ecosystem Compatibility

- Seamless integration with KiloLink Server Pro, KIS Pro, Multiview Pro, NDI CORE MAX, CUBE R1, and other Kiloview solutions, enabling multi-camera remote production, real-time monitoring, and recording management;
- Compatible with mainstream NDI devices and third-party platforms;
- Supports online firmware upgrades for continuous system optimization and feature expansion.

Product Application



Application for Encoding Mode



Application for Decoding Mode

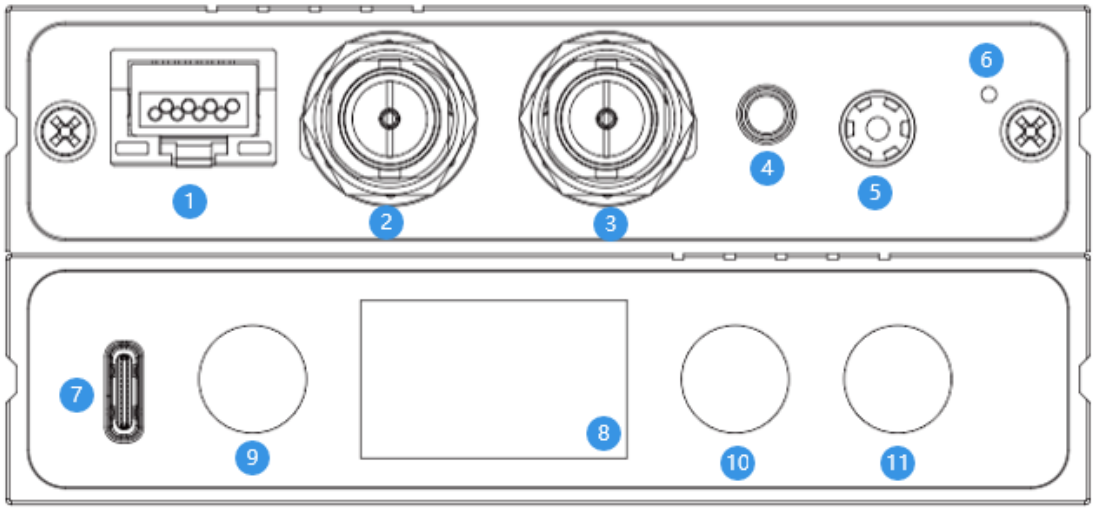
Product Specification

Model	N5
Functions & Performance	
Input & Output Specifications	(1) 1920x1080p 60/59.94/50/30/29.97/25/24/23.98fps (2) 1920x1080i 60/59.94/50fps (3) 1280x720p 60/59.94/50/30/29.97/25/24/23.98fps
Encoding Capabilities	1. Supports encoding output of NDI High Bandwidth / NDI HX2 / NDI HX3 2. Maximum encoding resolution up to 1920×1080 @ 60fps, YCbCr 4:2:2, 8-bit 3. Output resolution can match the input signal or be manually configured: (1) 1920x1080p 60/59.94/50/30/29.97/25/24fps (2) 1280x720p 60/59.94/50/30fps 4. Supports 2-channel audio encoding
Decoding Capabilities	1. Supports decoding NDI High Bandwidth/NDI HX2/NDI HX3 2. Maximum decoding resolution up to 1920x1080 60fps 4:2:2 8-bit 3. Output resolution and frame rate can follow the input stream or be set manually: (1) 1920x1200p 60fps (2) 1600x1200p 60fps (3) 1920x1080p 60/59.94/50/30/29.97/25/24fps (4) 1920x1080i 60/50fps (5) 1680x1050p60fps/1280x1024p60fps (6) 1400x900p60fps/1366x768p60fps/1280x800p 60fps (7) 1280x720p 60/50/fps (8) 1024x768p60fps (9) 800x600p60fps/720x576p50fps/720x480p 60fps/640x480p 60fps 5. Supports 2-channel audio encoding
Video Codec Support	1. SpeedHQ (NDI CODEC): SHQ0, SHQ2 2. ISO MPEG-4 Part 10: Advanced Video Coding (AVC)/ITU H.264 ■ AVC (H.264): Baseline, Main Profile, High Profile(Default) 3. ISO MPEG-H Part 2: High Efficiency Video Coding (HEVC)/ITU H.265 ■ HEVC (H.265): Main

Audio Codec Support	NDI Audio(PCM); AAC-LC; Additional formats available via software expansion
Typical Encoding Bitrate	1. SpeedHQ (NDI CODEC): (1) 1080p60: 132Mbps (2) 1080p30: 112Mbps (3) 720p60：105Mbps 2. AVC(H.264): (1) Adjustable from 2 Mbps to 40 Mbps (2) Recommended ≥ 10 Mbps for 1080p60 for good subjective quality 3. HEVC(H.265): (1) Adjustable from 2 Mbps to 40 Mbps (2) Recommended ≥ 6 Mbps for 1080p60 for good subjective quality
NDI Features	1. Integrated with NDI SDK 6.2 (v2.00 or later), with ongoing updates 2. Supports NDI Bridge (v1.10 or later)
Intercom	Supports group intercom when used with Kiloview Intercom System (KIS) Requires external USB headset for voice communication
USB Webcam Input	Supports USB webcam as a video input source via USB
PTZ Control	1. PTZ control via USB-expanded serial ports (RS-232 / RS-485) 2. Network-based PTZ control protocols supported: Sony VISCA, Pelco-D, Pelco-P
Management	1. Web-based configuration via WebUI 2. Centralized remote management via Kiloview KiloLink Server Pro 3. Real-time device and codec status display on front-panel LCD 4. Supports HTTP APIs
General Specifications	
Video Input	● 1x 3G-SDI ● USB Type-C
Video Output	1x 3G-SDI
Audio Input	● 3G-SDI：2-ch ● 3.5mm Audio：2-ch ● USB Type-C：2-ch
Audio Output	● 3G-SDI：2-ch ● 3.5mm Audio：2-ch

Network	1× Gigabit Ethernet (10/100/1000 Mbps adaptive) Supports PoE (IEEE 802.3af)
USB	1x USB 3.0 Type-C
Tally	Front-panel LCD Tally indication; Rear-panel Tally LED
Front Panel	1.14" color LCD/Touch buttons
Power	12V–18V DC input or PoE power supply
Power Consumption	<=6W
Physical Specifications	-20°C ~ 45°C / -4°F ~ 113°F
Storage temperature	-20°C ~ 70°C / -4°F ~ 158°F
Accessories	1. Power adapter 2. Cold shoe mount
Dimensions	100mm*111mm*23mm
Net weight	320g

Product Overview



1	1000M Ethernet Port-PoE	2	SDI IN
3	SDI OUT	4	LINE IN/OUT
5	Power Input	6	Tally Status Indicator

7	Type-C Expansion Port	8	LCD Display
9	Previous Page Button	10	Next Page Button
11	Confirm Button		