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CAST 10NDI

5 CHANNEL ALL-IN-ONE STREAMING SWITCHER

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Use your custom network to revolutionize your video production workflow

iCAST 10NDI
5 Channel All-In-One Streaming Switcher

iCAST 10NDI is a new and innovative live production switcher with a built-in camera controller and streaming encoder. A variety of inputs can be connected to iCAST 10NDI which allows you to create an eye-catching presentation with different video sources, designed for classrooms, lecture capture, and conferencing. You can easily live stream to
multiple platforms and record your presentation to an SD card with it' s built-in streaming encoder & recorder. Six video channels can be ISO recorded simultaneously in order to provide you with more program materials for video post-production. iCAST 10NDI is designed for mid to large scale live events like professional conferences, seminars, company product launches and house of worship services. iCAST 10NDI is a highly efficient and easy-to-use solution for any video streaming and recording for many online content creators.

iCAST 10NDI is designed for live video production with the following features:

- Multiple input channels via HDMI, SDI, UVC and Ethernet interfaces
- Switching between five video channels at mid to large scale live events
- Simultaneously record six video channels which are comprised of five input videos and one main program out.
- Decode up to three NDI channels
- Built-in CG
- Compatible with dvCloud video streaming and backup service
- Supports 9:16 vertical video streaming
- Multi-audio channel calibration as well as individual audio channel delay for synchronizing audio with video
- Remote control via LAN, Internet and RS-232 using any Datavideo controllers
- Supports TPC-700, RMC-300A, RMC-180 MARK II and PTZ View Assist APP (free) for camera control

iCAST 10NDI Front Panel

3.5 mm Headphone
Jack for monitoring volumes of various audio sources.

Menu on 2" LCD Screen
In addition to displaying basic system status, you can also monitor various other functions such as streaming, recording, etc.

Menu Selection Knob
Easy access to various function parameters and various options. You can also switch between different system status.

HDMI/SDI Switch Button
Press the button to switch Channel 1 between HDMI and SDI video sources.

Program OUT
Source selection button row is used for selecting video sources for Program OUT or swapping PIP/ POP images.

iCAST 10NDI Rear Panel

Audio IN
RCA and XLR dual input design for connecting external analog audio inputs.

UVC Port
Connects off-the-shelf web cams or document cameras as input sources.

HDMI/SDI Video Inputs
Connect cameras, switchers or other external video sources. Channel 1 is an HDMI/SDI selectable input.

4 Channel Multiview layout (MV) selection buttons
Switch between vertical and landscape orientations of the 4 Channel quad preview layout.

Record/Stream Buttons
Quick access to activating and deactivating record and stream functions.

Hard disk drive slot
Insert 2.5" SSD for video recording. Up to six video channels can be ISO recorded at the same time.

Power Input
DC IN (7-15V)

SDI Loop OUT
Loop out SDI video source to an external device.

Multi-view OUT
Video sources are displayed in 4x1 vertical or 2x2 landscape quad view for easy monitoring of all video materials.

Program OUT
HDMI PGM OUT can be used for connecting monitors, large screens, external recorders or projectors.

RS-232 Port
A control port for connecting external devices or acts as a serial port for system integration.

WAN/LAN
WAN or LAN port can be used for IP video streaming or DVIP control.

iCAST10 Six Main Features

1. Seamless Switching

2. Multichannel Audio Mixing

3. Video Streaming

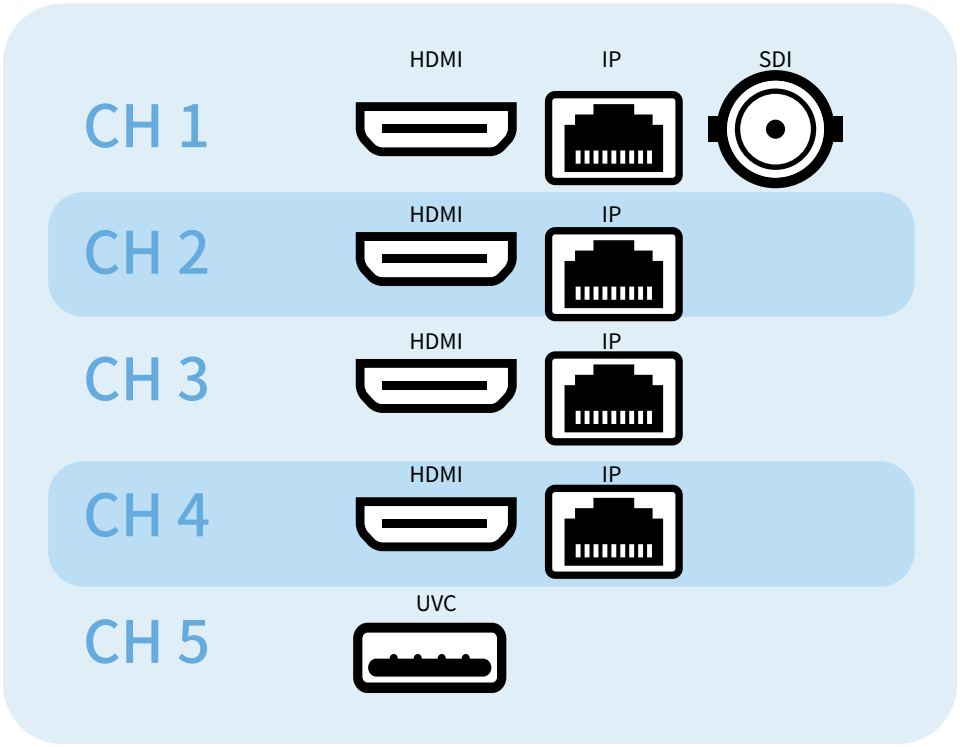
4. Multi-Camera Video Recording

5. Character Generator

6. System Control

Multiple Video Input Interfaces

- iCAST 10NDI has five video inputs with one SDI/HDMI selectable port, three HDMI only ports and one USB 3.0 port.
- iCAST 10NDI accepts videos from various professional cameras, laptops and document cameras.
- Receive IP videos via an RJ-45 port. IP videos are streamed using RTMP or SRT protocol. With a variety of video interfaces, you no longer need to worry about compatibility of different video devices.



SRT READY NDI®|HX

HDMI/ IP/ SDI

IP

UVC

Dual Multi-view Modes

Landscape Mode: Stream to standard monitors

iCAST 10NDI provides an intuitive preview of output videos. You can view them either horizontally or vertically (a new technology for viewing videos on mobile devices) and preview these mode changes on a Multiview screen.

Select the fourth or fifth channel at the user's discretion.

Portrait Mode: Stream to mobile phones

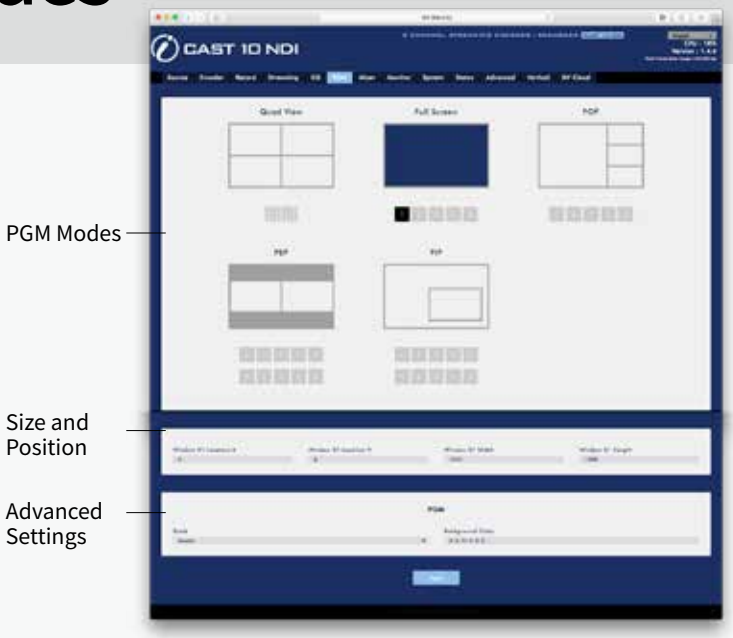
When using the vertical screen mode, you will need to make sure that the cameras are shooting vertically; rotate the cameras if necessary. If the camera is shooting horizontally, crop about one third of the left and right outer edges of the screen and keep the desired image in the center.

Select the fourth or fifth channel at the user's discretion.

Multiple PGM Modes

In addition to displaying a full screen view of the program out video, you can also stream the four input videos live to your audience. The iCAST 10NDI offers five Multiview layouts to allow you to show your input videos all at the same time. The videos can be streamed to all corners of the world and your audience can, with zero delay, participate in your events using a receiver/decoder, personal mobile devices, computers, etc.

In order to satisfy the live audience, the iCAST 10NDI provides physical HDMI outputs, allowing you to connect to TVs, LCD/LED TV walls, etc.



Five PGM Modes

The iCAST 10NDI offers five different ways to display your output videos:
1. Full screen
2. POP
3. PIP
4. Side by side
5. Quad view.

Side by Side

With the two camera images placed side by side, it is often used during the Q&A session at a conference or House and Senate committee meetings.

Full Screen

This is the most traditional way to deliver the complete image to your audience. It is mostly used for teaching and speech scenarios.

Quad View

The quad view is usually used for remote meetings where all participants can show themselves and interact with one another.

PIP

PIP stands for picture in picture which allows the lecturer to show slides, data, examples, etc in a sub window. PIP is useful when data and the lecturer have to display on screen at the same time.

POP

This is a multiview layout with one main and three sub windows which is useful in scenarios involving a lot of interaction such as corporate meetings, remote lectures, etc.

Stream OUT

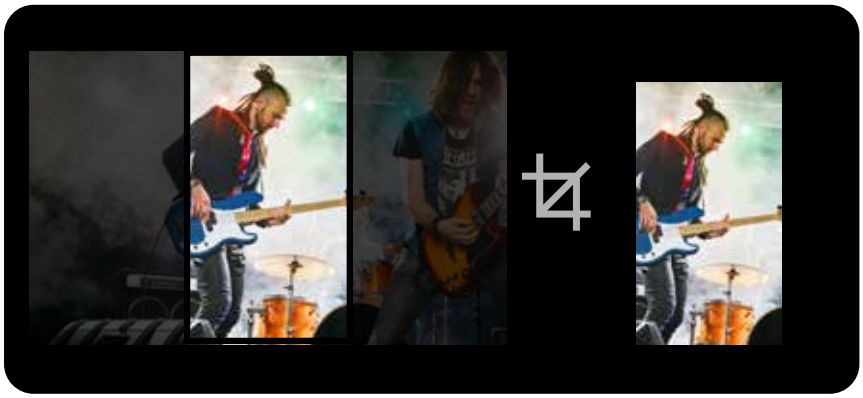
You no longer need multiple devices to stream your video to multiple platforms. This is now achievable with one iCAST 10NDI.

Vertical streaming appropriate for video playback on social media

Up to 50% of the videos are viewed on mobiles and 94% of the mobile users hold the phone vertically to view the video. iCAST 10NDI provides vertical streaming which can be generated with only a few basic settings.

Vertical Streaming

Auto capturing of the image in the center for vertical streaming.



iCAST 10NDI supports NDI input and output.

iCAST 10NDI offers another alternative to broadcast quality low latency video transmission.

Supporting SRT protocol so that iCAST 10NDI works well even in slow networks

Video latency often results when there is insufficient network bandwidth. iCAST 10NDI supports SRT protocol which mitigates packet loss when the network becomes unstable. Sometimes RTMP may give you stuttering viewing experience but SRT will solve your problem.

NDI®|HX

SRT READY

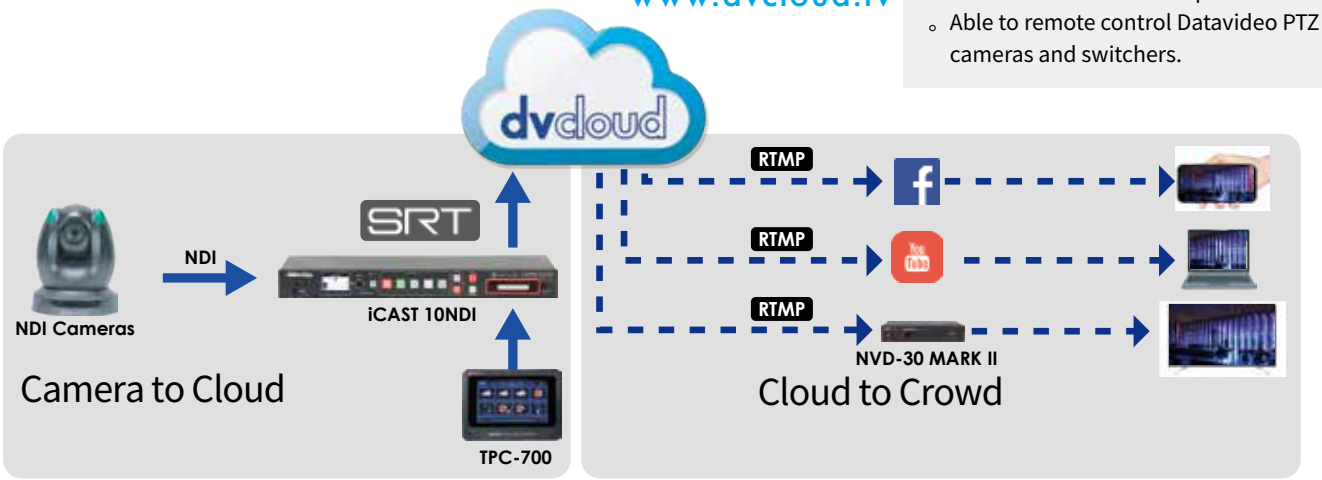
Add dvCloud to enhance your streaming experience

dvCloud, a paid service, is a professional streaming platform developed by Datavideo. Once you've logged in, you can manage all the streaming channels that you have created. You can stream your video up to 25 platforms simultaneously without any time limit while backing up the video on the cloud automatically for future downloads. iCAST 10NDI, SRT and dvCloud form a low latency, secure and reliable streaming workflow.

dvcloud SRT Support SRT

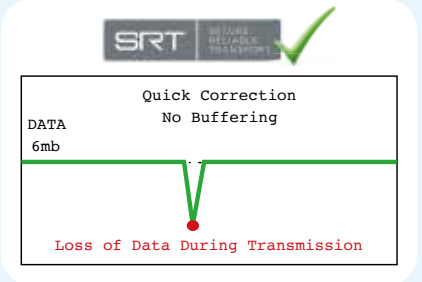
www.dvcloud.tv

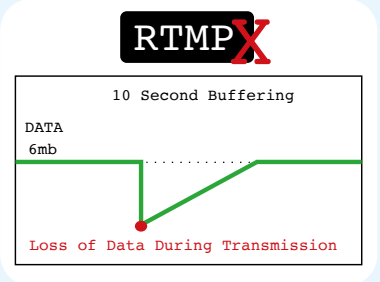
- Supports SRT low latency streaming.
- Simultaneously stream 1 to 25 videos.
- Encrypted connection.
- Stream and record videos Simultaneously.
- Intuitive multi-channel operation.
- Able to remote control Datavideo PTZ cameras and switchers.



Why use SRT?

RTMP is the most used streaming protocol but SRT is a more efficient solution to counteract video latency and network instability. SRT requires less bandwidth than RTMP so you can still enjoy a reliable streaming service in a low bandwidth network environment. SRT handles problematic networks more efficiently than RTMP protocol because it has a more powerful data processing algorithm so there is less packet loss and the video image can be better recovered.

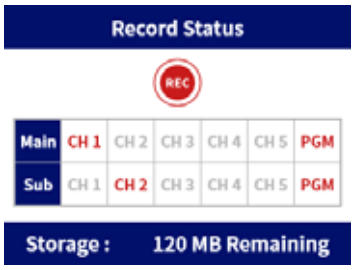




Recording

Easy-to-read LED indicator

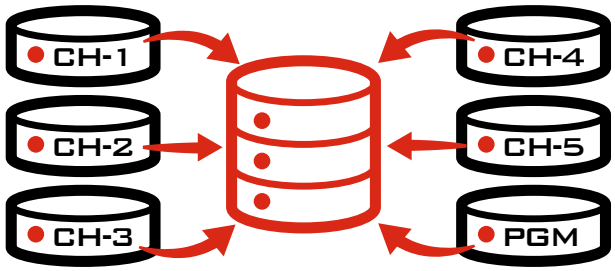
The LED indicator can only display two different colors: red or green. A red indicator means that the video is being recorded and a green indicator appears when the record function enters standby mode. The 2" LCD screen on iCAST 10NDI allows you to view the record status of all video channels.



ISO Recording

ISO recording refers to the ability to create isolated recordings of your five camera inputs and one PGM output for video backup and adding visual effects during post production. ISO recording allows you to save your data locally or on a file server.

ISO recording of five video inputs and one main program output



H.264 Encoding to back up HD videos

A built-in professional recorder records using H.264 video encoding with configurable resolution, frame rate, video bitrate, etc.

Resolution

Supports up to Full HD 1080p50/60 broadcast record quality with a low file size so it is often used for long time recording. Even with a high data compression ratio, fine details of the image can still be retained as well as high recoverable color information.

Multi-Channel Audio Mixing and Audio-to-Video Synchronization

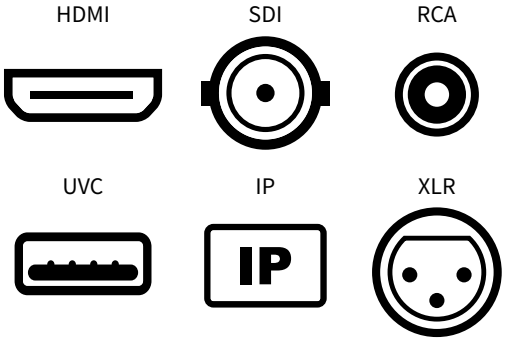
In addition to embedded audio, we have also provided input ports for external audio such as XLR port and RCA terminals for audio players. The Web audio, the most popular audio source, is another external audio source. You can easily perform professional audio mixing with iCAST 10NDI and at the same time switch between AES and EBU modes so that your output audio will always be compatible with various audio systems in different countries without issues such as unstable audio volume and the audio and video out of sync error.

A variety of audio input and output ports

XLR and stereo RCA ports for external analog audio and a 3.5 mm headphone jack for audio monitoring.

Audio Delay

iCAST 10NDI is capable of independently delaying each audio channel by adjusting the delay time in order to eliminate the audio and video out of sync error.

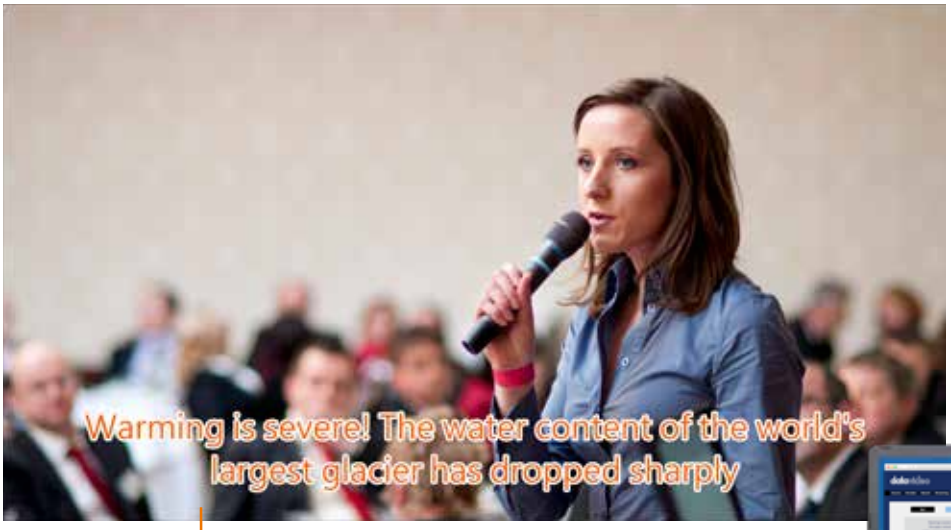


Multiple Character Generators

Custom real-time captions and subtitles for your programs such as news broadcast

iCAST 10NDI allows you to add graphic elements such as logos, titles, course chapters, event workflows, etc to any input video channels or the program output. These graphic elements can be still images, animated graphics, or simply texts. You can adjust the size, position, color and borders to highlight the information that you wish to convey to your audience. You can also transcribe audio by entering subtitles line by line using News CG after which you will be able to play subtitles in real time by simply tapping the space bar on the keyboard controller.

News	Real-time news subtitles
Graphic	Background image
Logo	Logo
Animation	Animation



Real-time news subtitles

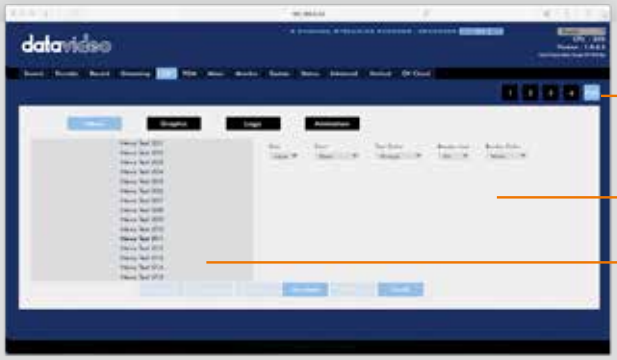
Transcribe audio by entering subtitles line by line using News CG then play subtitles in real time by simply tapping the space bar on the keyboard.

Animation

Logo

Real-time news subtitles

Character Generator Interface: Intuitive and Easy to Use



Customize subtitles for each video channel (CH1/CH2/CH3/CH4/PGM)

Preview the text position Clear and easy to use

Enter the text and configure the text properties

Two font types

SimSun

Lecturer:
Professor Chia-Hao Huang

Yuan

Lecturer:
Professor Chia-Hao Huang

7 Font Colors

White, Black, Red, Orange, Yellow, Green, Blue

Three font border colors

Borderless

White Border

Yellow Border

Black Border

Control

Multiple Control Protocols:

iCAST 10NDI supports multiple control methods which are DVIP, RS-232, Web UI and the LCD screen. The LCD screen is located on the front panel of the device. DVIP is a control protocol developed by Datavideo for controlling peripheral devices such as cameras, switchers and recorders, allowing you to create a complete video production environment. Additionally, you can also connect TPC-700 which is an external touch panel controller that you can connect to iCAST 10NDI via DVIP to gain access to an intuitive and easy-to-use graphical user interface.

Menu on 2" LCD Screen
In addition to displaying basic system status, you can also monitor various other functions such as streaming, recording, etc.

HDMI/SDI Switch Button
Press the button to switch Channel 1 between HDMI and SDI video sources.

4 Channel Multiview layout (MV) selection buttons
Switch between vertical and landscape orientations of the 4 Channel quad preview layout.

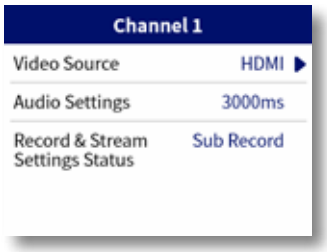
Menu Selection Knob
Easy access to various function parameters and various options. You can also switch between different system status.

Program OUT
Source selection button row is used for selecting video sources for Program OUT or swapping PIP/POP images.

Record/Stream Buttons
Quick access to activating and deactivating record and stream functions.

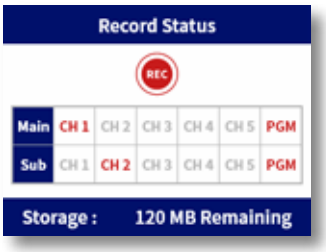
2" LCD Monitor

Channel Status

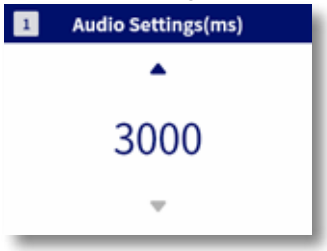


Video Source Settings

Record Status

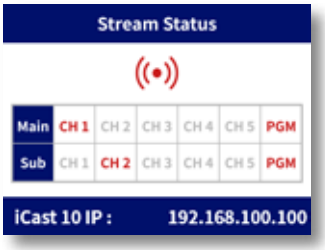


Audio Delay Setting



IP Setting

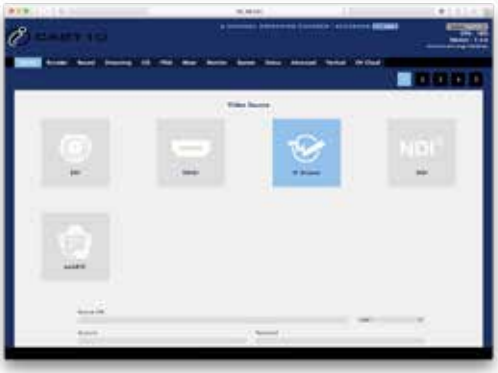
Stream Status



Web UI Control

PGM

Source



CG

Mixer

Vertical and Portrait Modes

Streaming

DVIP Control Protocol

TPC-700
Touch Panel Controller (Optional)

The iCAST 10NDI APP is installed on the TPC-700 touch panel controller along with many frequently used control settings. The responsive touch panel allows you to easily switch between different control modes, adds versatility to video production and reduces operation complexity.

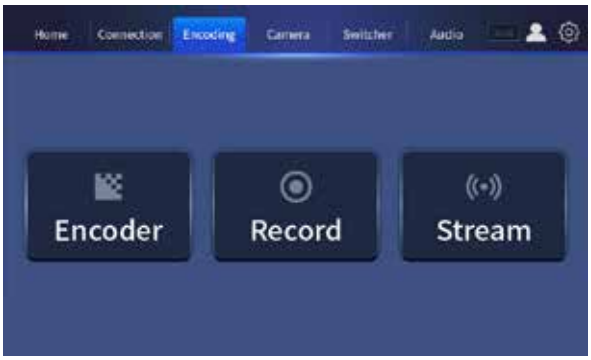
Shortcut key mode 1

Shortcut key mode 2

Camera Control

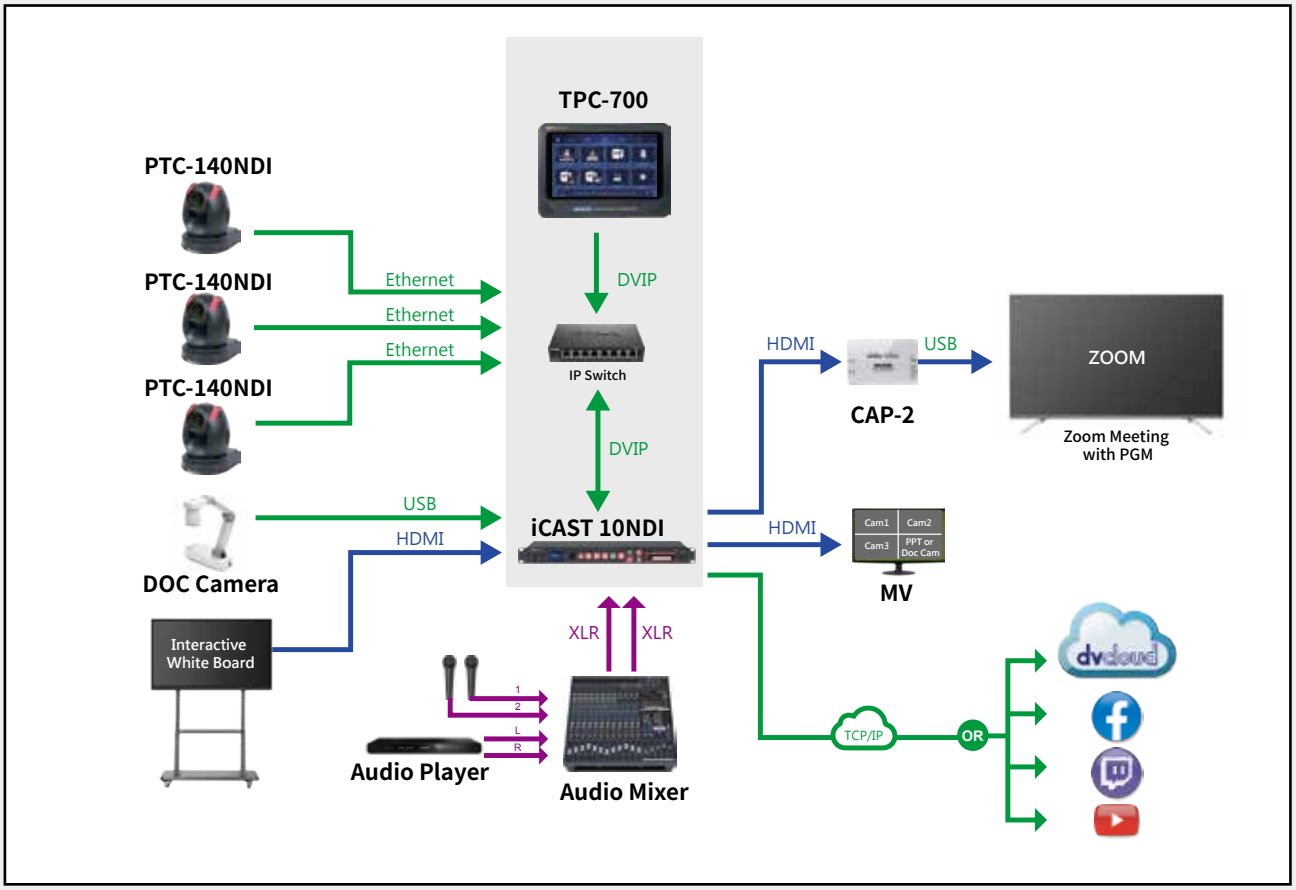
Video Switching

Video encoding, recording and streaming

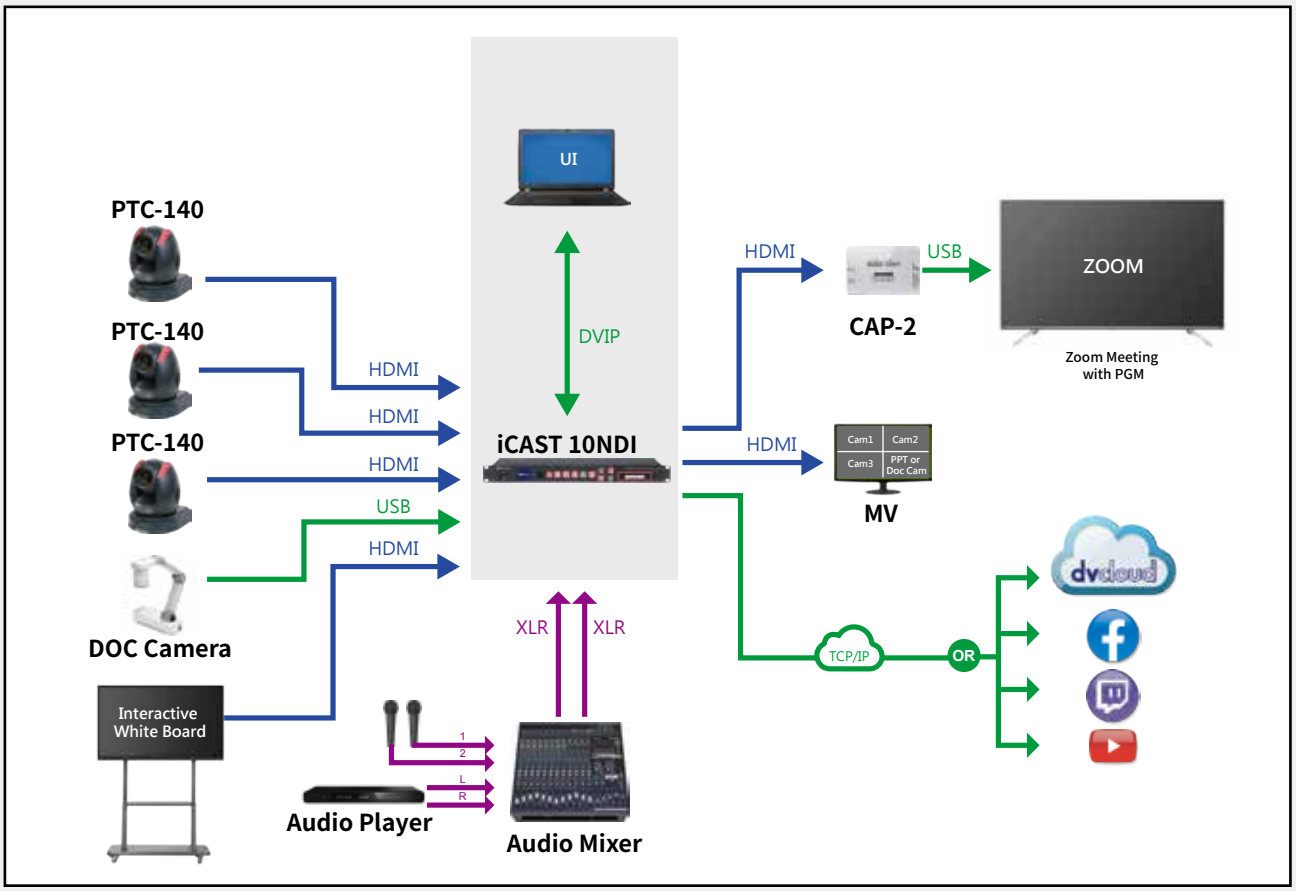


Audio mixing and synchronization

LAN Controlled System



Local Video Connection System



iCAST 10NDI Specification

	iCAST 10NDI
Video Standard	HD & SD
Video Format	Input: 1080p60/59.94/50, 1080p30/29.97/25/24/23.98 1080i60/59.94/50 720p60/59.94/50 480i59.94, 576i50 Output: 1080p60/59.94/50 → 1080p60/59.94/50 1080p30/29.97/25/24/23.98 → 1080p30/29.97/25/24/23.98 1080i60/59.94/50 → 1080p30/29.97/25 720p60/59.94/50 → 720p60/59.94/50 480i59.94, 576i50 → 480p29.97, 576p25 (not supporting interlace)
Video Input	3G/HD/SD-SDI x1 (BNC 75 ohm) HDMI 1.4 x4 (Channel 1 as SDI/HDMI selectable) USB 3.0 x1
Mix HD & SD Source	Yes
Computer Graphic Interface	4 via HDMI
Video Output	3G/HD/SD-SDI loop-through x1 HDMI 1.4 x1 (PGM) HDMI 1.4 x1 (Multiview) RJ-45 female x2 (10/100/1000M Ethernet) (LAN & WAN
Down-converted Output	1080p output
Built-in Multi-view Monitoring Out	HDMI x1
Analogue Audio Input	XLR Balanced audio x2 RCA Unbalanced audio x 1 pair SDI embedded audio HDMI embedded audio IP Audio (RTSP AAC-ADTS, PCM) (External and embedded audio mixable)
Analogue Audio Output	3.5mm x1 (headphone, PGM audio monitoring)
Digital Embedded Audio Support	HDMI Embedded x4, SDI embedded x1, UVC embedded x1, XLR x 2ch, Line in x1, IP stream decoded audio x2
Audio Delay Calibration	Each channel delay time: 0-3000ms
A+V Switching	Yes
Title Creator	Web GUI
Picture in Picture	Yes (PGM)
Logo Insertion	Yes
Effects	Cut
Transition Preview	N/A
Sync / Reference In/Out	N/A
Tally Output	N/A
PC Remote Control	Web UI for system configuration and control Serial Port Control: RS-232 (RJ-45)
Built-in Audio Mixer	Yes
Storage	SATA (6Gb/s)
Recording file system	FAT, NTFS, exFAT
Recording file format	MP4
Video Encode	H.264
Audio Encode	AAC-LC Sample rate: 48KHz, 16bit AAC-LC Sample rate: 48KHz, 16bit Configurable bit rate: 128K or 256K or 384K
Streaming Protocol	DHCP client TS over UDP (unicast & multicast) RTSP over HTTP/TCP/UDP RTMP (Publish)/RTMPS HLS SRT Caller and Listener Web RTC (encode/decode) NDI | Hx
Firmware Update	Web UI (network)
Special Features	Vertical video: crop or rotate Vertical video Multiview
Chassis	1RU rack-mount mainframe
Dimension (LxWxH)	440x284x44
Weight	2.9 kg
Power	DC 12V 24W
Operating Temp. Range	0~40 ° C
What's in the Box	1 x iCAST 10NDI main unit 1 x DC 12V Power Adaptor 2 x 1U Rack Mount Ear 6 x M4 Screws for Rack Mount Ear 1 x 2.5 Removable HDD/SSD Enclosure 4 x Screws for 2.5 Removable HDD/SSD Enclosure 1 x Blank Label 1 x SATA to USB 3.0 Cable

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