

Product Information

VSN OneTV



Index

01 _ What is a Channel in a Box and who is this product for?	pág. 4
02 _ How does VSNOne TV work?	pág. 5
02.1 _ Cloud Mode	pág. 7
03 _ The workflow with VSNOne TV	pág. 8
04 _ Content ingestion from any source	pág. 10
05 _ File transcoding, transfer and validation	pág. 12
06 _ Creation and playout of advanced graphics	pág. 14
06.1 _ Graphics for live production	pág. 16
06.2 _ RSS feeds and display of sensor information	pág. 17
07 _ Broadcast automation and multichannel playout	pág. 18
08 _ Advanced functionalities	pág. 20
09 _ Technical specifications	pág. 22



01 _ What is a Channel in a Box and who is this product for?

A Channel in a Box (CiaB) or integrated playout is a software application that integrates all the necessary tools to create and manage television channels. It streamlines the operations of a television channel, since it usually combines content ingest, file transfer, graphics, broadcast automation and a playout system within a single video server.

With an integrated playout it is possible to quickly launch multiple channels because these systems are easy to install and offer simplified integrations. In addition, acquiring, operating and maintaining a **Channel in a Box** is very cost-effective. Therefore, a Channel in a Box is the ideal option for televisions, audiovisual companies, public and private institutions, and universities that need to create and manage new channels without the need to make a great investment. And it is also ideal for those who have to launch a TV channel within a short period of time.

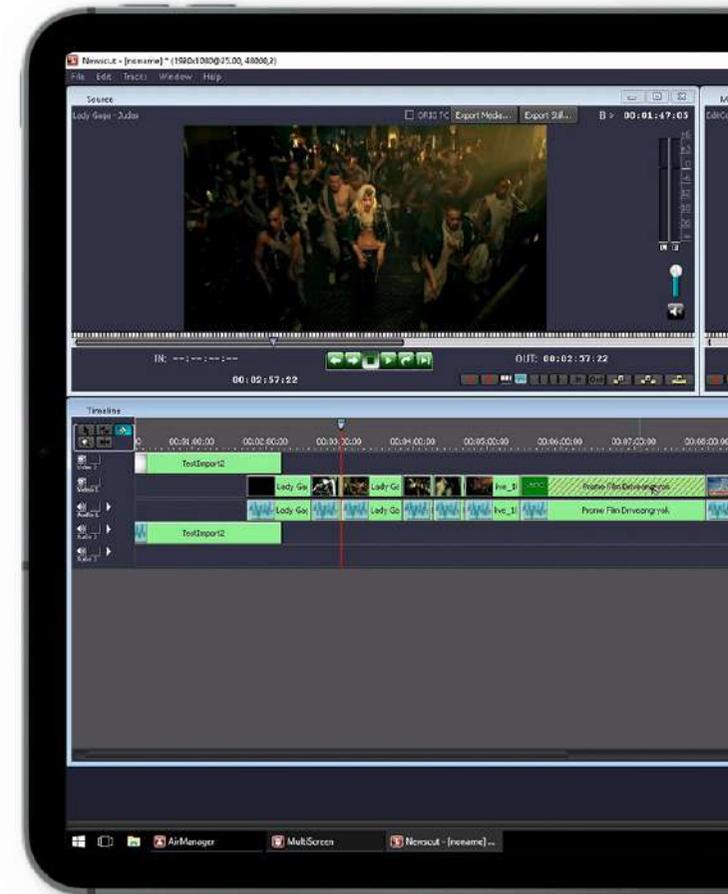
02 _ How does VSNOOneTV work?

VSNO's integrated playout, VSNOOneTV, integrates all the tools you need for the broadcast automation of linear or non-linear channels.

“ You will be able to organize and define the contents for the broadcast playlist while the media ingest is still in progress. ”

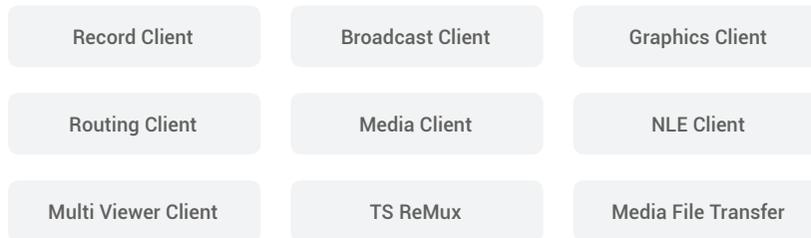
With customizable keyboard shortcuts, broadcast of live events and a built-in tool for navigating between keyframes, **VSNOOneTV** allows you to broadcast your content in record time.

Files, baseband signals and IP streams are grouped together in a single software application, as well as live events, NDI, transcoding, device control, advanced graphics and playout. In other words, multiple client software and tools can be configured in a single video server for media ingest, quality control (QC), content scheduling, video editing, creation of graphical elements and broadcast automation, thus allowing maximum flexibility when purchasing the product.

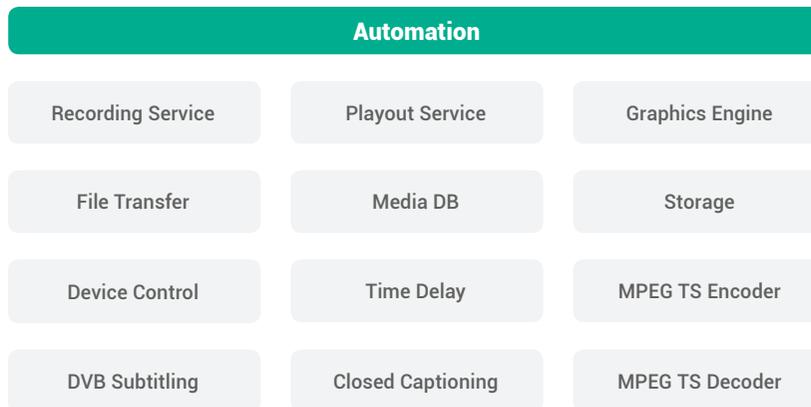


02 - How does VSNOneTV work?

Client Software & Tools



VSNOneTV - Channel in a Box

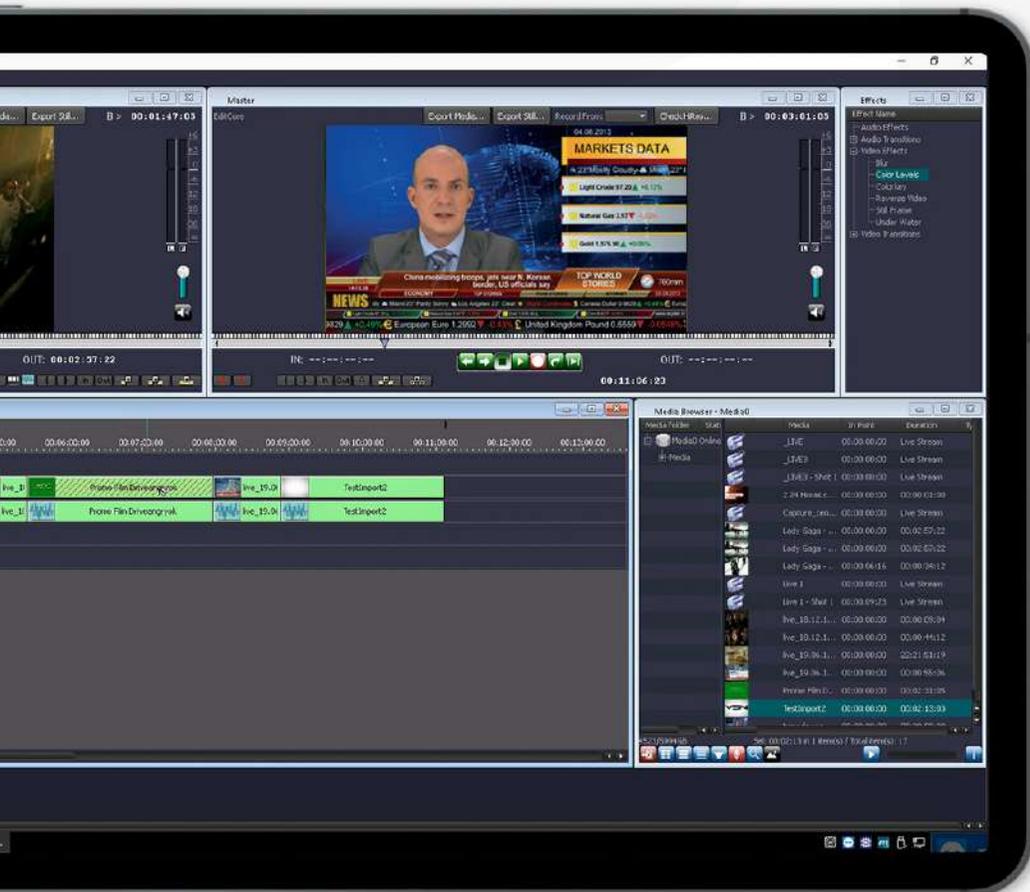


In addition, **VSNOneTV** can be tailored to suit customers' specific needs in term of ingest/playout channels and data capacity. VSN's CiaB offers from 1 to 6 ingest or playout channels and even 8 channels depending on hardware. The storage space can be as flexible as required, the default settings are from 24TB to 48TB and this amount of can be even higher if an external storage module is used. Moreover, each **VSNOneTV** occupies only 2 rack units, which allows for a high number of ingest or playout channels in a very small space.

02.1 – Cloud mode

VSNOne TV is also available as Software as a Service (SaaS) application in the cloud. This modality offers the following advantages:

- Decentralized and totally autonomous broadcast automation in the cloud
- Installation in private or public cloud
- Media transfer, ingest of live content and video distribution over IP
- Ability to send video signal to one or several locations simultaneously



03 – The workflow with VSNOneTV

With VSN's **Channel in a Box**, the workflow of management and broadcast automation of a traditional television channel or a non-linear channel can be divided into the following parts:

Content ingestion from any source

Manual or automated media ingest from SDI, IPTS and DVB-ASI sources. It allows the ingest of a wide variety of SD, HD and UHD files and also supports P2 and SxS cards.

File transcoding, transfer and validation

Creation of proxies and transcodings to a wide variety of formats and codecs. Send your content to multiple storage locations with VSNOne TV's integrated file transfer system based on rules.

Creation and playout of advanced graphics

Create, compose and play out graphics and animation. Graphical compositions can include multiple layers of text, logos, video clips, Chroma Key, Picture-in-Picture (PiP) elements, etc.

Broadcast automation

For broadcast automation, create playlists or import files. VSNOne TV also integrates with traffic systems. Make changes to the broadcast playlists while they are being executed.

03 _ The workflow with VSNOneTV

SD / HD / UHD multichannel playout

From 1 to 6 SD / HD playout channels or 2 UHD channels. VSN's CiaB supports files with different codecs, containers, resolutions and frame rates. Simultaneous SDI / IP / ASI / NDI broadcasting.

Advanced functionalities

Additional functions such as Built-in Multiviewer, device control, Time-Delay, subtitling tools, dynamic insertion of advertisements, full redundancy, etc.

The technical specifications and advanced features of each part of the workflow are explained in more detail in the sections below.

04 - Content ingestion from any source

SD / HD / UHD multichannel ingest and batch capture mode



With **VSNOneTV** you can automatically or manually ingest content from any source, including files from the network or local sources, as well as content from P2 and SxS cards.

VSN's integrated playout can have up to 6 ingest channels (or even 8 channels depending on hardware) in SD / HD or 2 channels in UHD in real time for a wide variety of codecs and containers. The multiple formats that the Channel in a Box supports are the following: SDI, DVB-ASI SPTS / MPTS and IP UDP / RTP / RTSP, FEC, MPEG-2 / H.264 / H.265 TS. HLS, NDI, RTMP.

Also, VSN's CiaB allows the creation of multiple ingest profiles, which may be exchanged instantly. In addition, ingest playlist can be designed, edited, imported, and exported for ingest channels.

As an optional feature, for ingest from tape, tape players are connected to the servers through RS-422 / IEEE1394 server ports. Batch capture mode is used when working with a VTR according to the ingest playlist created.

04. Content ingestion from any source

Clipping



VSNOneTV allows you to divide the content into subclips while it is being ingested with frame accuracy. Using this functionality, different segments of a video file are created and each segment has its own metadata, time code, and input and output marks. In short, these subclips can be used to organize and divide long video files.

Simultaneous media ingestion and broadcasting



VSNOneTV is able to ingest and broadcast content simultaneously. Media can be previewed, edited, and broadcasted only two seconds after the ingest or import process starts.

It also allows you to ingest in real time the content that is being broadcasted without having a specific ingest channel dedicated to this.*

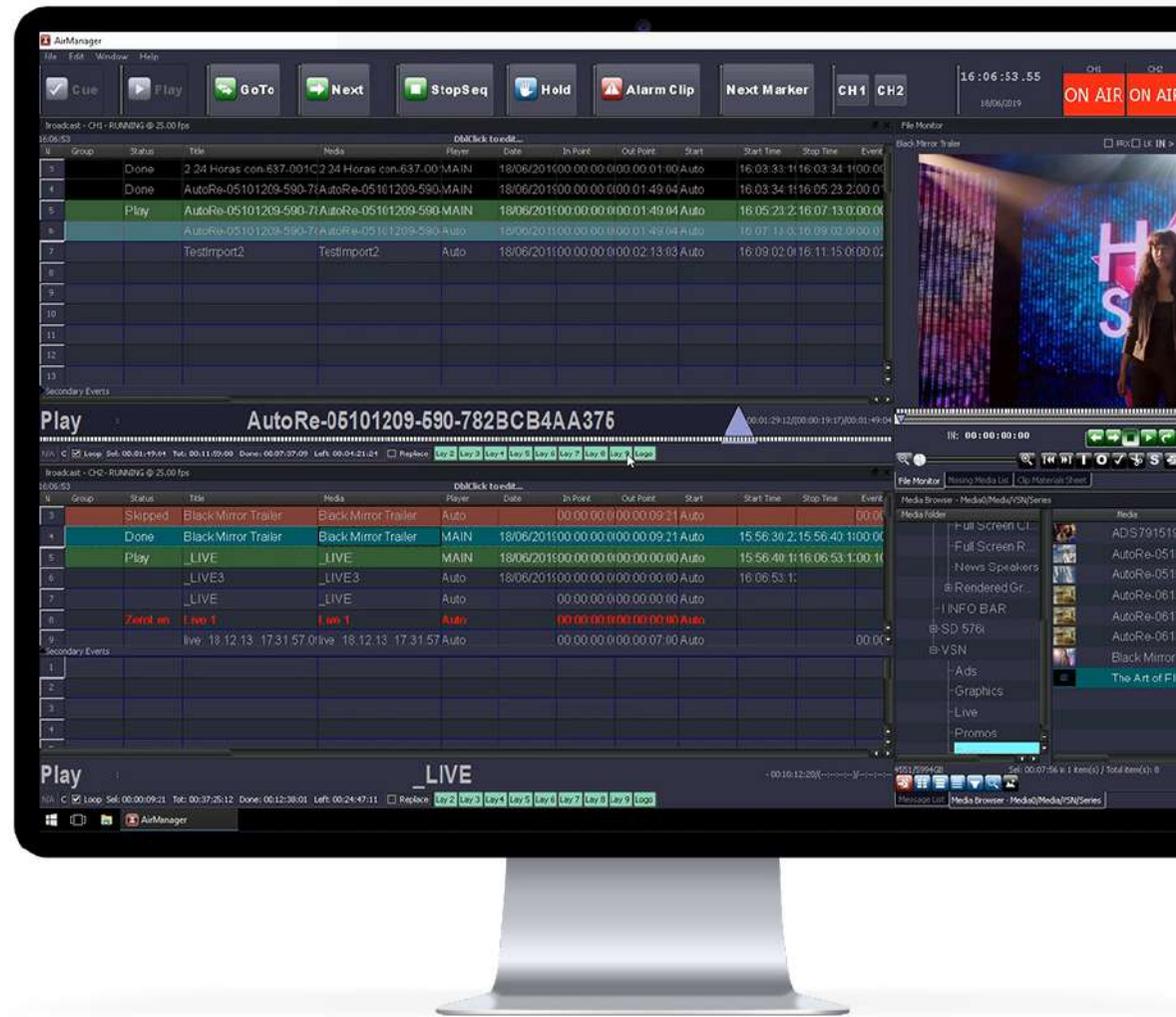
*** Note:** *The ingest channel will be necessary if you need to record a video signal from a live broadcasting.*

05 - File transcoding, transfer and validation

Media transfer and storage



VSNOneTV has an integrated rule-based system for transferring ingested files to multiple locations or storages. Files that are being ingested in real time can be sent to external NAS storage for editing or to other storage servers to create a redundancy system.



05 _ File transcoding, transfer and validation

Transcodification during media input and output



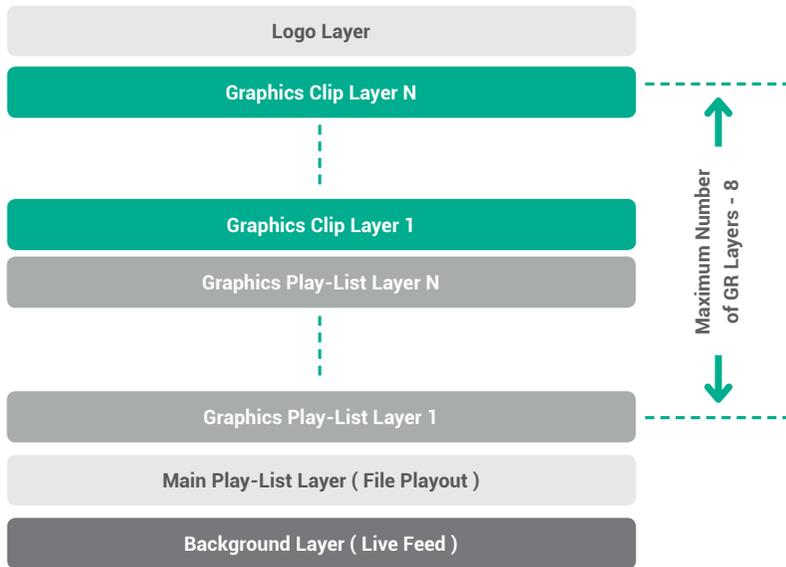
During media ingest, proxies in low resolution are automatically created and can be previewed two seconds after the ingest or import process starts.

In addition to creating the proxy, during the file import process VSN's Channel in a Box allows for background transcoding and you can choose the container, codec, aspect ratio, frame rate and resolution.

Audio normalization can also be programmed according to the EBU / R128 standard or by defining custom offset levels on the I/O signals. Another advanced functionality is the audio track shuffling during ingest and broadcasting.

Content with different formats can be added to broadcast playlists, since **VSNOneTV** is able to transcode files in real time into the chosen output format.

06 - Creation and playout of advanced graphics



06 _ Creation and playout of advanced graphics



VSNOneTV can be used to create, compose and broadcast multi-layered graphics and animations, making it perfect for boosting your brand through graphics, timely news updates, and other compelling visual content. This advanced feature also makes VSN's CiaB ideal for bringing higher production value to types of content that require vast volumes of graphical elements, such as news, sports, and entertainment shows, etc.

Each **VSNOneTV** playout channel contains up to eight virtual channels for graphics playout. Each channel contains a graphical event, which is a playlist of graphical content, and each event can have up to 7 layers of graphics that are broadcasted on top of the video feed. Each layer can contain compositions that have an unlimited number of text and graphical elements.

06.1 – Graphics for live production

The playout of graphics can be manual or automated. Through auxiliary events, graphical events are related to a specific point in time of an event in the broadcast playlist.

“

These graphical composition can include multiple elements such as captions, text crawl, video clips, logos, animated banners, Chroma Key, 2D effects, and Picture-in-Picture (PiP) elements.

”

The playout of graphics that include live feed is a simple task with VSNOne TV. You can add this type of content to any graphical object and animate the result in real time, without using external equipment to scale up or down the image. PiP compositions allow you to play out a full-screen video with transparency on top of the video feed.

Graphics can also contain live video and audio from server inputs and audio mixers.

In addition, the Chroma Key tool allows you to easily choose the color that will be made transparent. Also, multiple Chroma Keys can be used in a single scene.

The initial creation of compositions with Chroma Key, live feeds and subtitles can be easily modified using keyboard shortcuts. It is also possible to connect an additional keyboard, either to the server or to the client station, to configure more keyboard shortcuts.

06.2 – RSS feeds and display of sensor information

With VSNOne TV you can also create graphical compositions that show information from external sources and RSS feeds. An example would be a graphical composition that contains a clock that shows the current time (or several clocks of different time zones) or that contains timers and stopwatches.

VSNOne TV allows for automatic parameterization of text elements contained in compositions, that is, the text of the graphics is updated automatically with the information obtained from the dynamic reading of RSS feeds or text files.

In addition, graphics can include information from multiple sensors (temperature, humidity, pressure, background radiation, etc.) based on the dynamic reading of text files, so there is no limitations on the types of sensors that can be used. In the following image we can see an example of a graphical composition that includes information from several external sources.

07 - Broadcast automation and multichannel playout

Broadcast automation



For broadcast automation, **VSNOneTV** has a built-in tool for creating and editing broadcast playlists, which are executed as a sequence of events. It is also possible to import broadcast playlists from Excel and traffic and scheduling systems. VSN's integrated playout supports broadcast playlists using the BXF protocol, among others.

In addition, it is possible to edit in real time the broadcast playlists while they are being executed. VSNOne TV allows for trimming of video clips in a broadcast playlist as well as advanced video editing for the broadcast of breaking news. To do so, you can preview the content, set in and out points in the timecode and subclips will be created.

Moreover, you can create macros in **VSNOneTV** both for ingest and broadcast playlists in order to create extra functionalities or control devices. VSN's Channel in a Box is capable of controlling a wide range of devices such as A/V routers, VTRs, captioning and subtitling systems and external CGs. The control of external routers, in particular, allows for automated line source switching in accordance with the broadcast playlist.

07 - Broadcast automation and multichannel playout

SD / HD / UHD multichannel playout



VSNOneTV has a playout system of up to 6 independent channels (or even 8 channels depending on hardware) in SD / HD or 2 channels in UHD. Files with different codecs, containers, resolutions and frame rates can be added to the playlists since the system is able to automatically transcode the media.

VSN's integrated playout also supports simultaneous SDI / IP broadcast. **VSNOneTV** has both SDI (SD / HD / Ultra HD) and IPTV / DVB output. H.264, HEVC and IP streaming with IPTV / DVB support operate through a built-in ethernet port.

VSNOne TV uses the NDI standard for the distribution of video over IP with the network infrastructure of the server (ethernet or fibre networks) or with existing external IP infrastructure. You can connect to NDI inputs and make NDI outputs available to all your networked equipment. The use of the NDI protocol gives the benefits of reduced cost and frees users from hardware constraints.

08 – Advanced functionalities

Full redundancy

N+1 and N+N redundancy available for ingest and playout channels with LTC synchronization.

Nonlinear editor

The NLE client application allows for professional video and audio editing, including advanced effects.

E-to-E

VSNOne TV can be used as an E-to-E or Back-to-Back system.

Built-in Multiviewer

Create a multiviewer with a single output, whether SDI, HDMI or IP, and add clocks, VU meter, etc., in order to easily monitor all your channels' signals.

Automated local insertions

It allows for local insertions in the video or IP signal from a central station following the SCTE-35/104 standards to insert dynamic ads or regional news in a newscast.

SCTE 35 and SCTE104

Data can be sent over IP (SCTE 35) or SDI (SCTE104), which allows for local insertions in the video, control of other devices, etc.

“Internal” Switching Mode

VSNOne TV's servers allow signals to pass directly from input channels to output channels. For example, the server can be configured to switch an input containing an AV signal as output after playing a news block (a video file).

08 - Advanced functionalities

DTMF cue tones, GPI commands (VBI) and video sample matching

The VSNOne TV media server can launch the broadcast of news segments either manually or entirely automatically by decoding DTMF cue tones and GPI commands in VBI, video sample matching, etc.

Time delay

Easily adjust the time delay settings for different time zones, for censorship of live programs, etc. The time delay parameters can be modified even when the channel is on air.

Controlled by VDCP

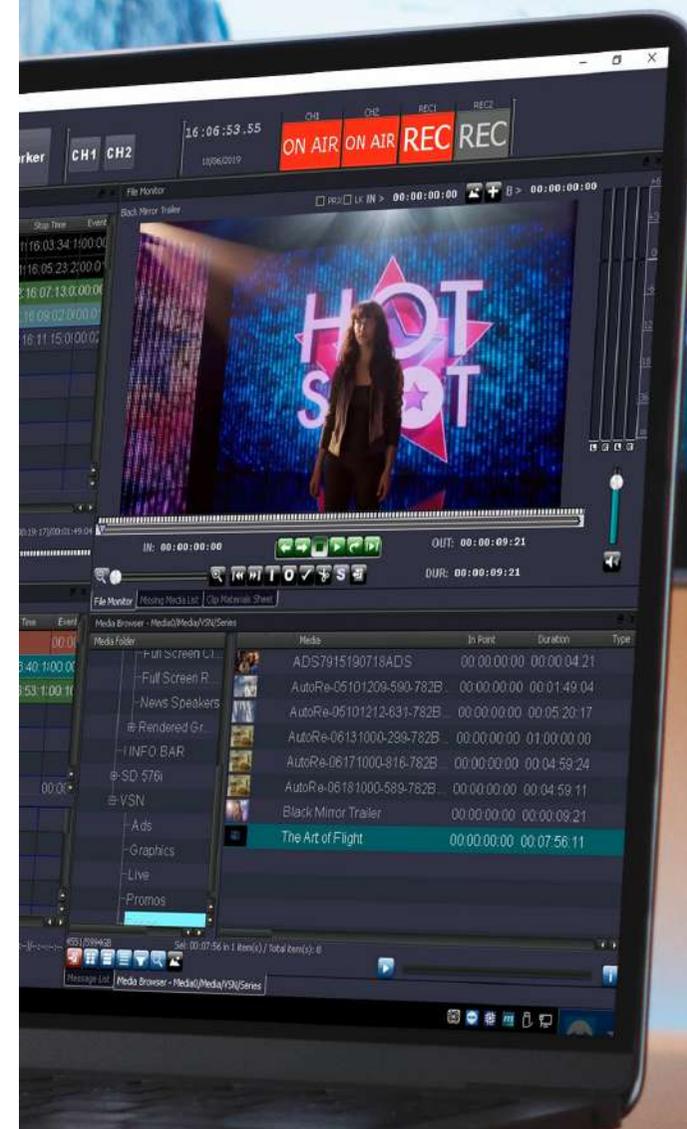
VSNOne TV can control multiple devices and be controlled by VDCP protocol to carry out video server functions.

Protection of RAID content

Media is protected with RAID 1 or RAID to ensure maximum level of system reliability.

HTML5 web interface

You can fully control VSN's integrated playout through its web interface, for both public and private cloud environments, without the need to install apps.



09 - Technical specifications

Technical specifications of VSNOneTV

<p>System configuration (depends on model)</p>	<p>10 to 24 core Intel® Xeon® Scalable Processors SILVER to GOLD 32 to 64 GB RAM 2x SSD boot drives 1000Base-T Ethernet ports Internal RAID 10 Enterprise SATA drives up to 6 hard drives or External Media Storage</p>
<p>Video formats (depends on model)</p>	<p>SD : 625i, 25 f/s, or 525i, 29.97 f/s HD : 1080i, 25 or 29.97 f/s, 1080p 60,50 or 59.94 f/s, 720p, 50 or 59.94 f/s UHD : 2160p, 25, 29,97, 50 or 59.94 f/s</p>
<p>Inputs / Outputs (depends on model)</p>	<p>SDI : SD/HD/2K/4K, 12G SDI, 3G SDI ST 424M and ST 425M-AB, 1.5G SDI ST 292M, SD SDI ST 259M, CVBS, YUV, Analog, AES/SDI Embedded Audio, IP : MPTS/SPTS over ASI/IP, Unicast/Multicast via UDP/RTP/RTSP, FEC (option), HLS, IPTS, NDI, RTMP, HD/SD MPEG-2 /H.264/H.265 ASI : HD/SD MPTS/SPTS over DVB-ASI</p>
<p>Resolution</p>	<p>320x240, 360x288, 640x360, 504x480, 720x480, 504x576, 720x576, 960x720, 1280x720, 1280x1080, 1440x1080, 1920x1080, 3840 × 2160</p>
<p>Audio</p>	<p>4 AES/EBU pairs and 8 pairs SDI embedded per video I/O channel, Cue-tone included Audio Processing (16, 20, or 24-bit PCM, 48kHz)</p>

09 - Technical specifications

Technical specifications of VSNOneTV

File Containers	AVI, MOV, MXF OP1A/D10, MPEG PS/TS, DV/DIF, FLV, VOB, MPG, BMP, TGA,PNG,PSD
SD/HD/UHD Encoding / Decoding	DVCAM, DVCPRO25, DVCPRO50, DVCPROHD100, HDV, IMX (30,40, 50), XDCAM EX (SP, HQ), XDCAM HD (LP, SP, HQ), XDCAM HD 422, DNxHD (36,120,145,185,220), AVCHD, MPEG2 GOP, MPEG 2 422 700Kbps-100Mbps, XAVC-S 420, XAVC-I/L 420/422 , H.264, H.264 422 200 Kbps-20Mbps - Apple ProRes HQ, ProRes, ProRes LT, ProRes Proxy, ProRes 4444, MPEG2/MPEG4 Part 10 (H.264 AVC) (HD). Profile and level: MP@ML, MP@HL, 422P@ML, 422P@HL; HEVC Encoder up to 4K/Ultra HD: 25, 29.97, 50, 59.94fps; HEVC Main / Main10 Profiles @ Level 5.1, 4:2:0 chroma sampling
Closed Captions	Extraction CEA-608, CEA-708 and Teletext to SRT, Pass-through ANC data, VBI/VANC Support, DVB subtitles and Teletext support
Aspect Ratio Conversion	Box, Crop and Letter. Manual or AFD2 enabled
GENLOCK REFERENCE (depends on model)	Analog blackburst reference (tri-level or bi-level) or SDI input as reference for SDI and PTP v2 for IP
Timecode	LTC in and support NTP client over Ethernet
O.S	Windows 7/8/10 64 bit, Windows Server /2012R2/2016R2
GPI I/O	8 inputs, 8 outputs*

09 – Technical specifications

Technical specifications of VSNOneTV

Remote serial interface	Up to 16 RS-232/422/483 ports for switchers, matrix and others devices. VTR control* PROTOCOLS: Sony 9-pin, Harris/Leitch, Evertz, Nevia and others*
Dimensions (depends on model)	2RU, Weight (24,41...25,62 kg)
Power & Voltage	Power Supply Dual hot-swappable; AC 115 to 120 V, 200 to 240 V, auto select

* Broadcast I/O depends on license and hardware configurations.

1 channel available in UHD configurations.

VSNOne TV is made on a base of high-performance server-based platforms with professional input/output cards (DekTec, Matrox, Blackmagic)

09 - Technical specifications

codecs	containers								
	AVI	MOV	MXF OP1A	MP4	DV/DIFF	MPEG2 PS	GXF	MPEG TS	FLV
DV25	X	X	X		X		X		
DVC PRO 25	X	X	X		X		X		
DVC PRO 50	X	X	X		X		X		
DVC PRO HD 100	X	X	X		X		X		
HDV	X	X	X	X					
IMX (30 / 40 / 50)	X	X	X	X					
XD CAM EX (SP / HQ)	X	X	X	X			X		
XD CAM HD (LP / SP / HQ / 422)	X	X	X	X			X		
MPEG 2	X	X	X	X		X	X	X	
AVC HD	X	X		X					X
H 264	X	X	X	X				X	X
AVCI (50 / 100)	X	X	X	X					
DNX HD	X	X	X						
PRO RES (SQ / HQ / SD / LT / PX)	X	X	X						
HEVC	X	X		X				X	
X 264	X	X	X	X				X	
XAVC	X	X	X	X				X	
DN XHR (SQ / HQ / HQX)	X	X	X						

VSN

INNOVATION & MEDIA SOLUTIONS

ON AIR

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VSN HEADQUARTERS

AutoRe-05101209-590-71 AutoRe-05101209-590-MAIN 18/06/2015 00:00:00 01:49:04

AutoRe-06131000-299-71 AutoRe-06131000- 18/06/2015 00:00:00 02:23:02

AutoRe-06171000-816-71 AutoRe-06171000-816- Auto 18/06/2015 00:00:00 01:00:04:59:24

AutoRe-06181000-589-71 AutoRe-06181000-589- Auto 18/06/2015 00:00:00 01:00:04:59:11

Black Mirror Trailer Black Mirror Trailer Auto 18/06/2015 00:00:00 01:00:00:09:21

AutoRe-05101212-631-71 AutoRe-05101212-631- Auto 18/06/2015 00:00:00 01:00:05:20:17

The Art of Flight The Art of Flight Auto 18/06/2015 00:00:00 01:00:07:56:11

The Art of Flight The Art of Flight Auto 18/06/2015 00:00:00 01:00:07:56:11

The Art of Flight The Art of Flight Auto 18/06/2015 00:01:49:00:03:36:00

Secondary Events:

1

2

3

4

Play AutoRe-06131000-299-782BCB4AA375 - 00:01:50:07(00:59:09:10)01:00:00:00

W/A C Loop Sek 00:00:00:00 Tot: 01:44:49:02 Done: 00:13:29:22 Left: 01:31:19:05 Replace Lev 2 Lev 3 Lev 4 Lev 5 Lev 6 Lev 7 Lev 8 Lev 9 Logo

Broadcast - CH1_LAY2 - RUNNING @ 25.00 fps

Player Date In Point Out Point

Auto 00:00:00 00:00:00 01

Left Title Auto 00:00:00 00:00:00 00

ft Title - 00:01:49:03(-----)-----

45228994KB Set: 00:07:56 in 1 item(s) / Total item(s) 8

Media Browser - Media\Media\VSN\Series

Media folder	Status	Media	In Point	Duration	Type	S/Name
Rendered Gr		ADS7915190718ADS	00:00:00:00	00:00:04:21		
INFO BAR		AutoRe-05101209-590-782B	00:00:00:00	00:01:49:04		AutoRe-05101
SD 576i		AutoRe-05101212-631-782B	00:00:00:00	00:05:20:17		AutoRe-05101
		AutoRe-06131000-299-782B	00:00:00:00	01:00:00:00		AutoRe-06131
		AutoRe-06171000-816-782B	00:00:00:00	00:04:59:24		AutoRe-06171
Ads		AutoRe-06181000-589-782B	00:00:00:00	00:04:59:11		AutoRe-06181
Graphics		Black Mirror Trailer	00:00:00:00	00:00:09:21		
Live		The Art of Flight	00:00:00:00	00:07:56:11		
Promos						
Series						

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