

AVAS-212

Medical-Grade Video Streamer



Features

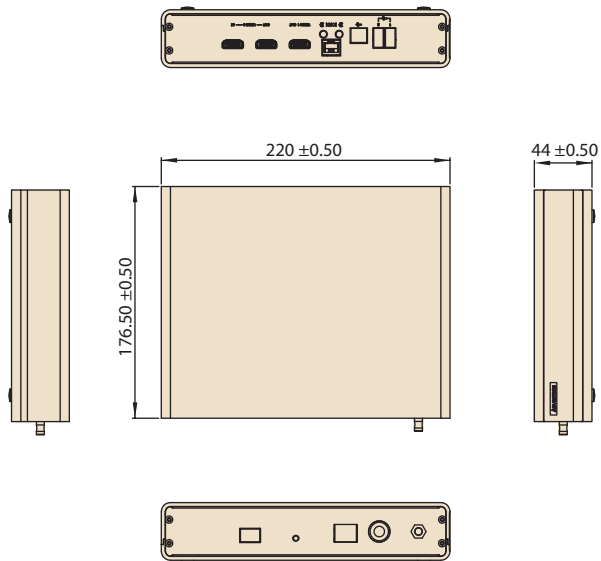
- Simultaneously use as an encoder and a decoder
- Zero latency to ensure excellent Hand/Eye coordination
- Ultra fast, lossless video transmission over IP
- All signals (video, images, audio, USB, and more) are transported via 10Gb optical fiber
- Multiple video sources can be displayed simultaneously on a screen with integrated video management
- Mouse and keyboard control the system behind the displayed images with superior hand/eye coordination even in QuadView or MultiView mode
- An open API enables user to integrate the product into environment or workflow management system

Specifications

Video	Input / Output Resolution	- 4Kp60 HDMI: 4Kp60 UHD (4096 x 2160, 60 frame rate), 1 x uncompressed video - 4Kp30 HDMI: 4Kp30 UHD (4096 x 2160, 30 frame rate), 1 x uncompressed video - FHDp60 DVI: 4Kp30 UHD (1920 x 1080, 60 frame rate), 1 x uncompressed video
	Direct display	Uncompressed video, latency < 1 frame
	Seamless switching	Latency 1 frame
	MultiView	Picture-in-Picture, Side-by-Side, Quad view, 1+3 bottom, 1+3 right
Audio	Audio	Analog audio in/out
Network	Network Bandwidth	10GbE
	Network Cabling	SFP+
	Video In	- 4Kp60 HDMI : 1 x HDMI 2.0 input - 4Kp30 HDMI : 1 x HDMI 1.4 Input - FHD DVI : 1 x DVI-D input single link
	Video Out	- 4Kp60 HDMI : 1 x HDMI 2.0 output - 4Kp30 HDMI : 1 x HDMI 1.4 output - FHD DVI : 1 x DVI-D output single link
	RS232	1 x RJ-10 type connector (no function, for future use)
	Audio out/in	2 for Audio out/in 3.5mm stereo jack connectors
	USB device	1 for USB 2.0 type B connector
	USB host	2 for USB 2.0 host type A connectors
	Grounding	1 x Equipotential Terminal
	DC input jack	1 for 12V DC power in
	Ethernet	1 RJ45 1GbE (no function, for future use)
	Status LED	1 for indicate the AVAS-212 operational status
	SFP+ slot	1 for SFP+ module only
Power		External Medical PSU, 100-240V AC NDcoder AVAS-212, 12V/2A DC
Certification		FCC, UL 60601, CE EN60601, CB EN60601, MDD, CCC
Environment	Operation temperature	0 °C to +40 °C
	Storage temperature	-10 °C to +50 °C
Physical Characteristics	Dimension	176.5 x 220 x 44 mm
	Weight	1.3 kg
	VESA mount	75 x 75 mm
Accessories		12V DC Medical Power Support Unit (PSU)

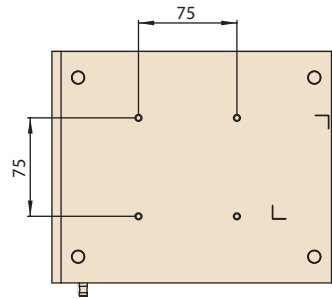
Dimensions

Unit: mm



Mounting

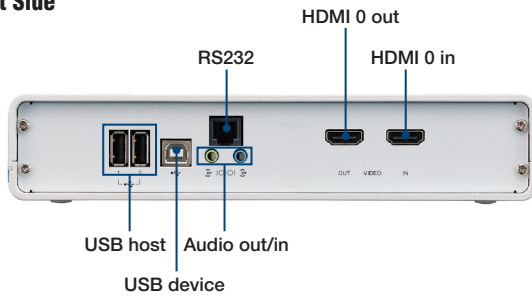
Unit: mm



I/O

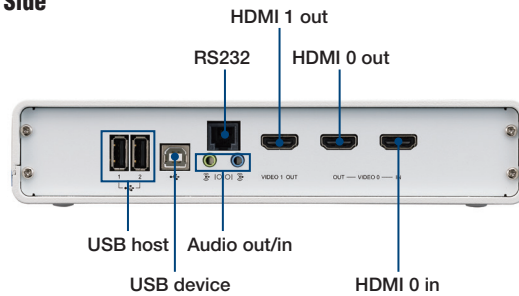
4Kp60 HDMI Version

Front Side



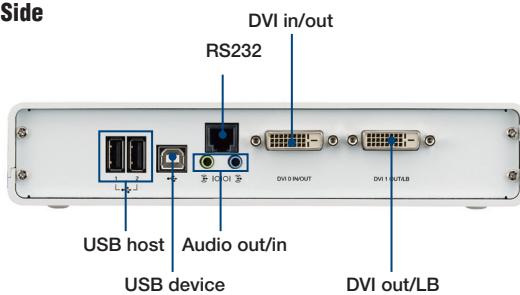
4Kp30 HDMI Version

Front Side



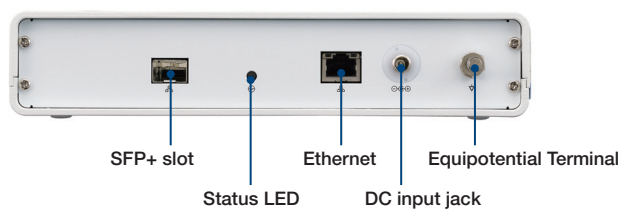
FHDp60 DVI Version

Front Side



AVAS-212 Video Streamer

Rear Side



*AVAS-212 can be integrated in PAX series surgical monitor, please go to <http://www.advantech.com> to refer surgical monitor introduction.

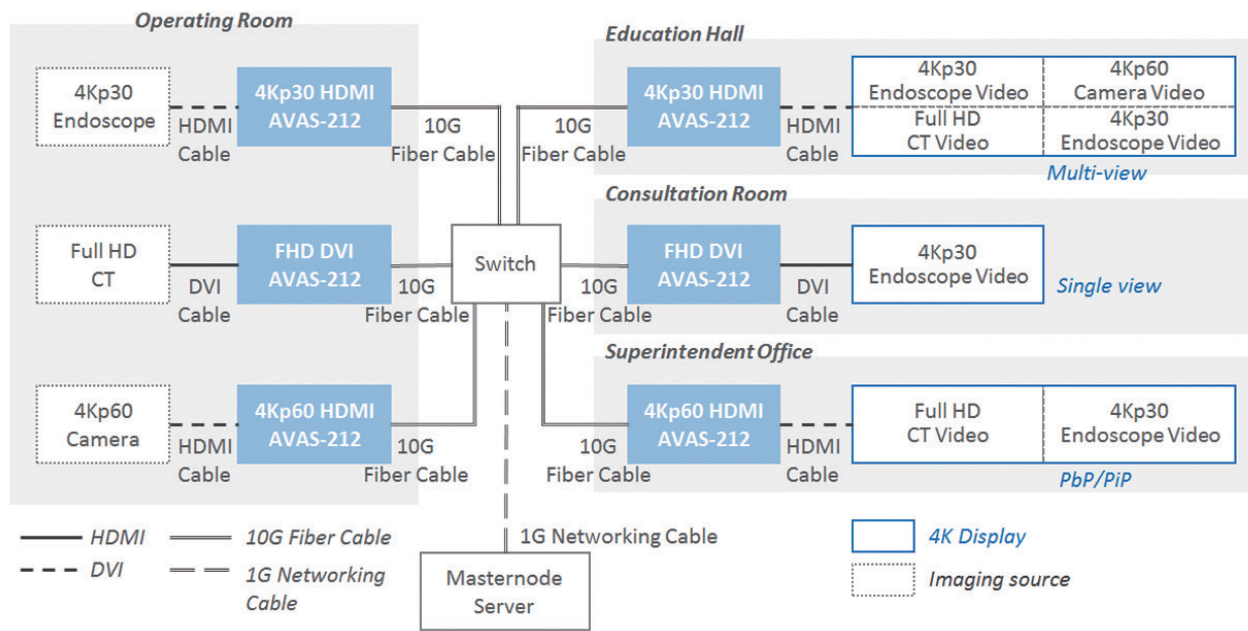
Ordering Information

Part Number	Description
AVAS-212-KNNO-D00	HDMI / Decoder or Encoder / 4Kp60 UHD / StreamingBox
AVAS-212-HNNO-D00	HDMI / NDCoder / 4Kp30 UHD / StreamingBox
AVAS-212-VNNO-D00	DVI / NDCoder / 1080p FHD / StreamingBox

Optional Items

Part Number	Description
AVAS-OPAC-0001	10G Networking Transceiver Module
AVAS-OPAC-0002	1G Networking Transceiver Module
AVAS-OPAC-0004	Networking Switch 16 Port
AVAS-OPAC-0005	Masternode Server
AVAS-OPAC-0006	10 inch Touch Control Panel
XAVAS-HPU32A-105	Power Adaptor 100-240V 30W 12V MED DC Jack
1702002600	Power Cord UL 3P 10A 125V 183cm
1702002605	Power Cord EU 3P 10A 250V 183cm
1700024369-01	HDMI-to-HDMI Cable 19P(M)/HDMI 19P(M) 1M
1700000243-11	DVI-to-DVI Cable 19P(M)/HDMI 19P(M) 2M
1700023491-01	DVI-to-HDMI Cable 19P(M)/DVI 19P(M) 1M

AVAS-212 Video Stream Connecting Architecture



AVAS-402

Medical VMS/Recorder and Computing Platform



Features

- Multi channels are supported to record 4K and FHD medical videos simultaneously
- H.265 recording technique enables to save high quality video while conserving storage capacity
- Video source can be previewed with 4Kp60 to make medical video accessible
- An open SDK and API enable user to integrate the product into environment or workflow management system
- Support Windows 10/Linux Kernel Operation System, FCC/CE/MDD 60601/UL/CB/CCC Certifications
- Support windows video recording and video management software
- Support Intel® Xeon® / 8th & 9th Core™ i7/i5/i3 processor with Q370/C246/H310 chipset
- Support software RAID 0, 1, 5, 10, TPM 1.2/2.0 (optional)



Introduction

With the 4K UHD picture resolution, AVAS-402 video recorders provide accurate and superior view of surgical procedure recordings. The AVAS-402 is perfect for surgery centers, operating rooms and training seminars to achieve the accuracy requirement for their procedures, which could also integrate for simultaneous display on monitors with diverse configurations at the same time.

Specifications

Video	Input Resolution (Capture Cards)	Up to 4K UHD
	Output Resolution (Displays)	Up to 4K UHD
	Compression Format	MPEG2 H.264, H265
Audio	Audio	2 (Mic-in/ Line-out) (Mic-in could be configured as "Line-in" under Win OS.)
System	CPU	Intel® Xeon® E-2278GE / E-2226GE / E-2176GE Intel® Core™ i7-9700E / i5-9500 / i3-9100E / i7-8700 / i5-8500 / i3-8100
	Memory	16G
	HDD	1T / 2T / 4T / 5T
	SSD	256 GB / 512 GB / 1TB
	Wifi	Intel® Wireless 802.11abgn + acR2 MIMO 2 x 2 + MU-MIMO
	BT	Intel® Bluetooth® 5.0
I/O	Capture I/O	4Kp60: 1 x HDMI 1.4 FHDp60: 1 x HDMI, 1 x DVI-I, 1 x YPbPr, 1 x SDI, 1 x CVBS, 1 x S-Video
	Video Display I/O	HDMI x 1, display port x 2
	Ethernet	RJ-45 x 2
	USB Host	10 (2 x USB 3.1, 4 x USB 3.0, 4 x USB 2.0)
	Audio Out/In	2 for audio out/in 3.5mm stereo jack connectors
	Rs232	RS-232 x 1
	M.2 (M Key)	1 x 2280 NVMe PCIe4 and SATA M.2 support
M.2 (E Key)	1 x 2230 for Wi-Fi, QG2/WG2 only	
Power		500W medical internal PSU, 100-240V AC in
Certification		FCC/CE/MDD 60601/UL/CB/CCC
Environmental	Operation Temperature	0 °C to +40 °C
	Storage Temperature	-10 °C to +50 °C
Dimension & Weight		320 x 329 x 145 mm, 10Kg
SDK Main Function		Streaming control, capture, recording, streaming, playback, editing, and tools

I/O



Ordering Information

Part Number	Description
AVAS-402-MVAB-PA40	Video recorder : 4K+FHD/Core™ i7-9700E/16GB/1TB/PSU/Wi-Fi/BT
AVAS-402-MVAB-PA50	Video recorder : 4K+FHD/Xeon® 2278GE/16GB/1TB/PSU/Wi-Fi/BT

Optional Items

Part Number	Description
AVAS-OPAC-1001	FHD 1080p PTZ camera
AVAS-OPAC-1010	Unified communication USB speakerphone
AVAS-OPAC-2001	GTX1650 4G PCIEX16 DVI+HDMI display card
AVAS-OPAC-2004	DVP-7011UHE 1ch 4K UHD capture card
AVAS-OPAC-2005	DVP-7611HE 1ch 1080p FHD capture card
AVAS-OPAC-6001	Recorder software license
AVAS-OPAC-6003	Video conference software license
1702002600	Power cord UL 3P 10A 125V 183cm
1702002605	Power cord EU 3P 10A 250V 183cm

AVAS-60

Integrated Mobile Surgical Workstation



Features

- 4K video streaming and archiving video data with remote console
- Near-Zero latency to ensure excellent Hand/Eyes coordination
- Easy plug and play of device to setup OR through optical cable
- Routing and switching from uncompressed video source to monitor
- Multiple video sources can be displayed simultaneously on a screen
- H.265 recording technique enables to save high quality video while conserving storage capacity
- An open API enables user to integrate AVAS product into environment or workflow management system

Specifications

Model	AVAS-60		
Base Cart	Dimension	Footprint	525mm x 525mm
		Work surface height	1000mm
		Total height	1860mm
		Angle capacity	85°
		ARM extension	1550mm
Archiving & Streaming System	Video	Input resolution	Up to 4K UHD (Capture)
		Output resolution	Up to 4K UHD (Graphic engine)
		Compression format	MPEG2, H.264, H.265 (record into HD & streaming out)
	Streaming	Uncompress format	Up to 4 channels (2ch x cameras, 2ch x externals)
		Video input-I & -II	HDMI 2.0, 3G/12G SDI, DVI-D, CVBS
	I/O	Audio input & output	2 (Mic-in/ Line-out)
		Network	4 x 10GbE SFP+, 1 x RJ45 GbE
		CPU	Intel Core i / Xeon
Host system	Memory	16G	
	HDD / SSD	1T 2.5"	
	Camera	Panoramic view	Output resolution
Image Sensor			CMOS
Camera control			PTZ
Surgical field		Zoom ratio	Optical 12X, digital 12X
		Resolution	4K UHD
		Image Sensor	Exmor CMOS
Medical Monitor	Display size	Zoom ratio	Optical 12X, digital 12X
		Display size	2 x 24" FULL HD LCD
Dispatch System	Display size	1 x 10" LCD	