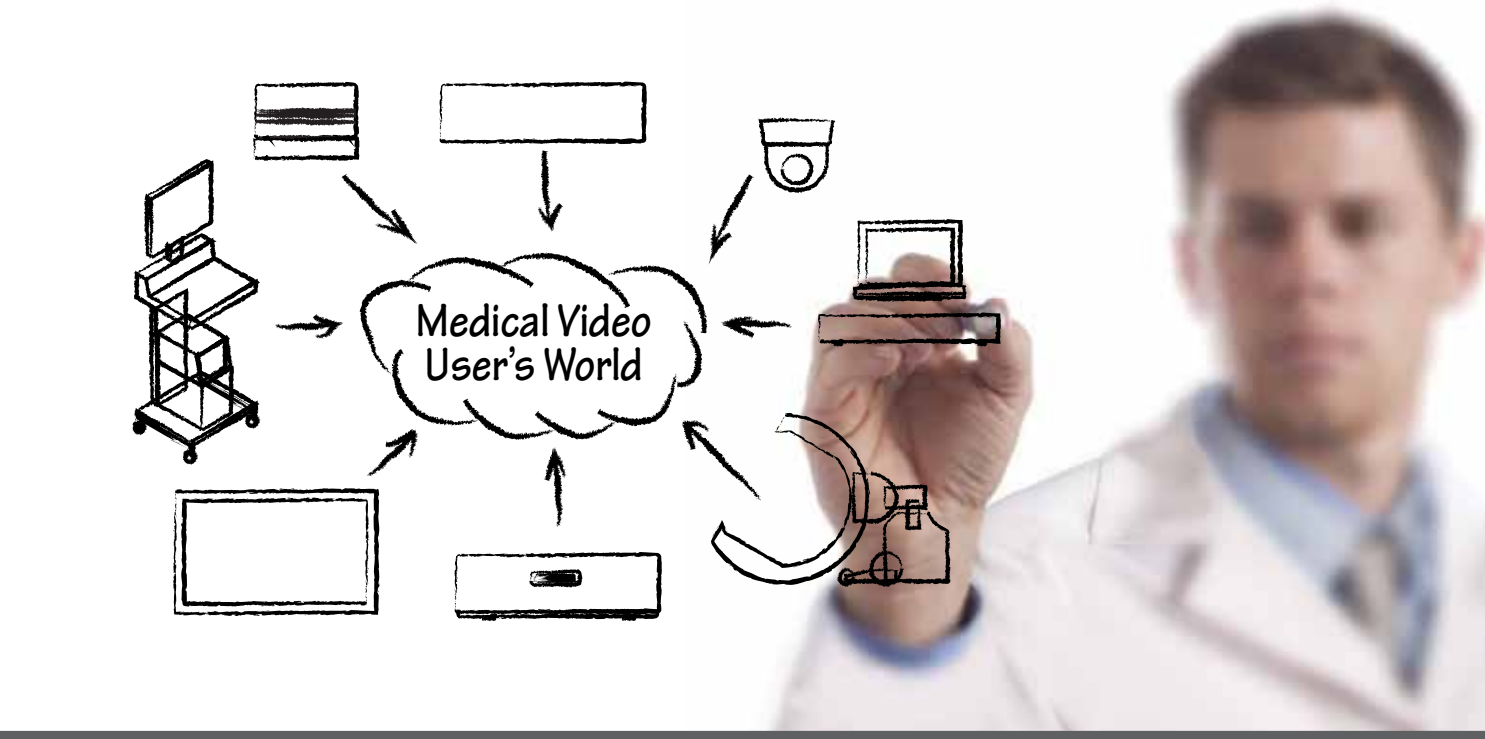
FSN
Medical Technologies

Managing Your Video Signals in the OR



Our customers' needs are our focus – from concept to design, prototypes, certifications, production and interface development. FSN products are characterized by seamless usability, compact modularity and robust functionality.

Solutions to Complete Your Video Product Offerings

A Full-Service Signal Systems Provider.

FSN's highly integrated design approach takes into consideration the multitude of video formats that are in use today. Our medical video solutions are engineered for compatibility with other highly specialized surgical and diagnostic equipment used in surgical suites, operating rooms, emergency rooms, and procedural facilities. We enable our partners' surgical products to benefit patient outcomes.

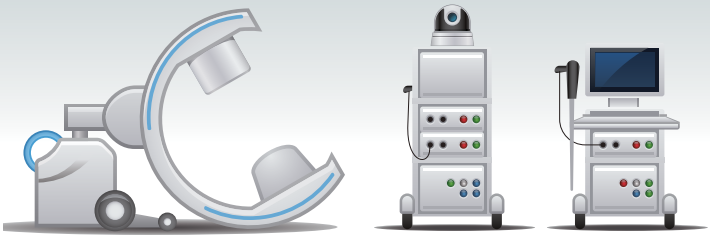
As a global medical solutions provider, we have developed, produced and delivered innovative surgical video products and solutions for over 12 years to the medical device industry.

Our customers are closely involved in the development process. This allows for a constant exchange of ideas and regular feedback. Through targeted training, we help our employees expand and deepen their skills and knowledge.

Market-Oriented Innovations Based On Your User's Needs.

Our recognized status for continued innovation allows us to serve the leading surgical integration providers to the healthcare market. Through partner facilities, we gather firsthand knowledge of user workflow requirements, as well as performance feedback on products.

The FSN Wireless solution provides O.R. integrators with uncompressed video and cable-free installation.



Source to Manag

Global Reach and Manufacturing Control.

FSN provides engineering design and technical support to the US, Europe and Asian markets, bolstered by global manufacturing facilities. Innovation projects are implemented across all global regions. This ensures that a broad range of ideas and information are exchanged based on multiple perspectives. Offices in the US, Europe and Asia strengthen our global customer partnerships.

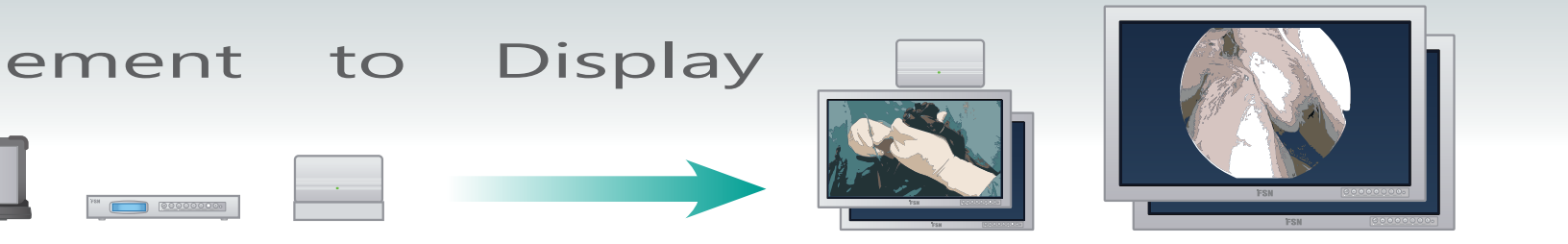
Technology expertise overlaps between signal display at our D&T facility and signal distribution at our Ophit optical facility.

"We listen to the needs of medical video users and utilize the latest technologies, tailored to medical applications."

FSN research and development is dedicated to medical video technologies. At the heart of our approach is an innovative development team whose members are dedicated to your success every step of the way.

A Capable Partner with Industry Expertise.

Innovation is at the heart of FSN's success. Continuous development of advanced imaging solutions is our foremost objective. As a valued supplier to the medical device industry, FSN's R&D teams work with client-partners to design and deliver products that meet or exceed real-world user requirements.



Integrated Design

FSN is your solution provider for OR video integration. We use the latest technologies and tailor them to medical applications. Our success has come from an experienced research team, product development expertise, global manufacturing access, and knowledgeable customer service. When you choose FSN, you are putting these capabilities to work for you.

Wireless Transmitter

Our wireless transmitter and receiver system delivers uncompressed, 1080p/60Hz, HD video with zero latency. Eliminate cumbersome cross-room cables or wires!

Connecting Infrastructure

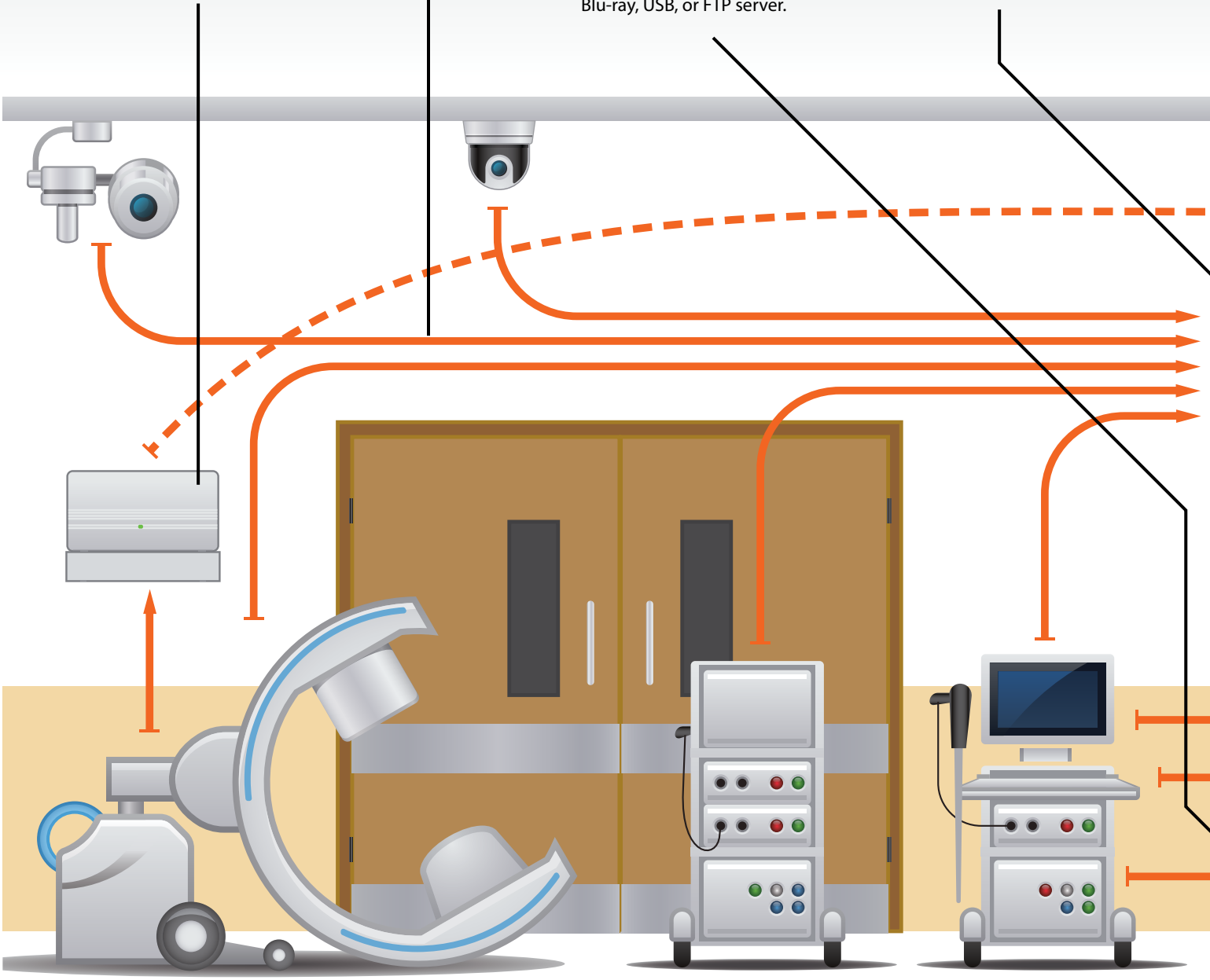
FSN supplies all of the medical video infrastructure components you need, from optical fiber and wall plates, to extenders, splitters, and converters.

Medical Digital Video Recorder

Image capture and recording in full HD with one easy-to-use device. MDVR features a 1 terabyte internal hard disk to store images. Files can then be transferred to the destination of choice: DVD, Blu-ray, USB, or FTP server.

Control OR

Designed for medical use, this image processing unit can scale, reformat, and split video signals, all from one central location. It features 10 input and 5 output capability. Control OR can even upgrade an analog signal to digital format.



Touch Screen Control Tablet

Combine ease of use and mobility with FSN's touch screen control tablets. Intuitive user inferface designs help reduce the learning curve for medical devices that are controlled by these tablets.

Universal Converter

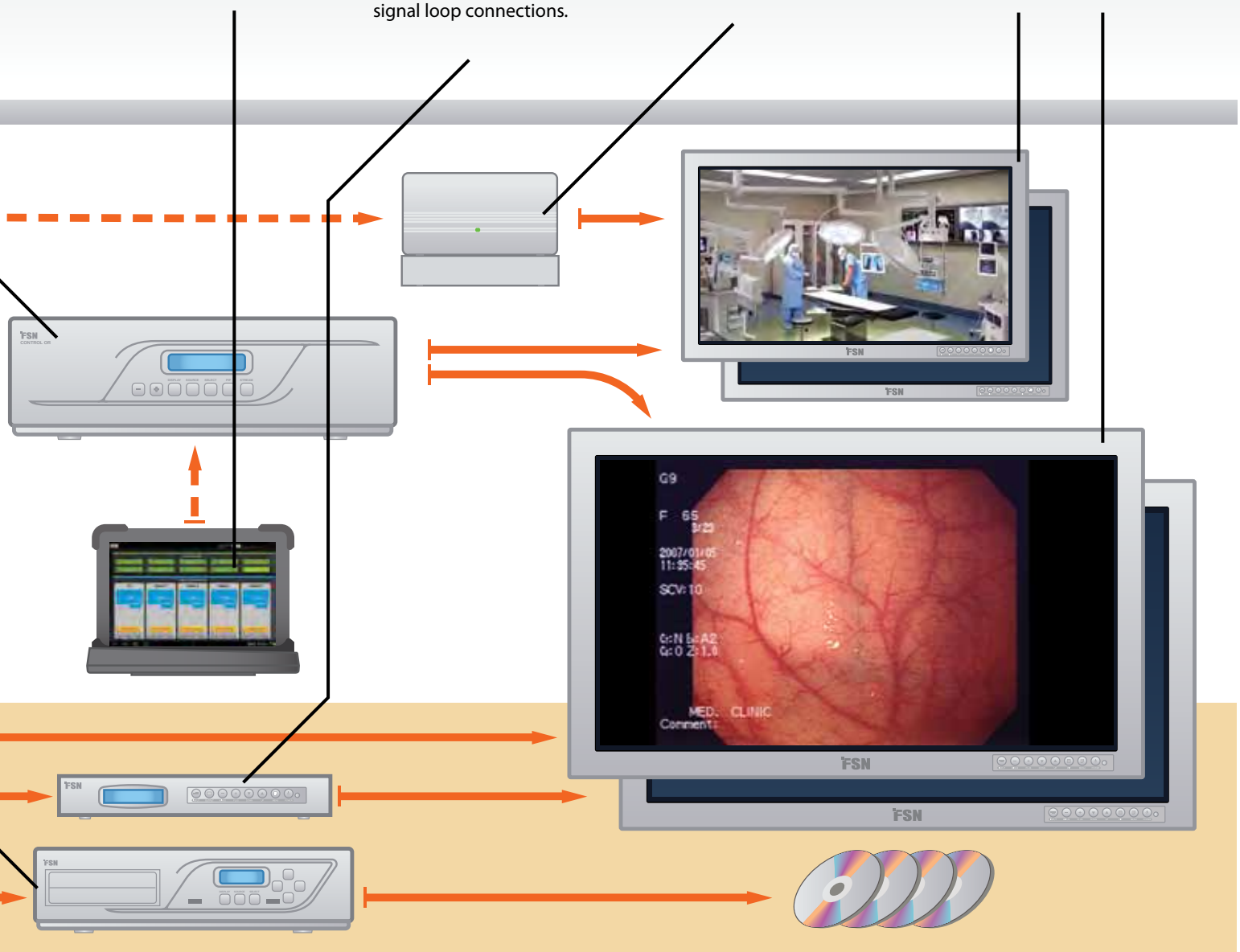
FSN's universal converter accepts a variety of video input signals, then converts them for output as DVI or 3G-SDI. It offers source switching, timing selections, PIP, PBP, swap, freeze picture, and signal loop connections.

Wireless Receiver

Our wireless transmitter and receiver system has options for standardizing proprietary signals and obtaining power directly from a display monitor to further reduce cords.

Medical Grade Display Monitors

FSN carries a full line of medical-grade display monitors, ranging in size from 19 to 55 inch. Each display comes with an extensive list of input and output connections.



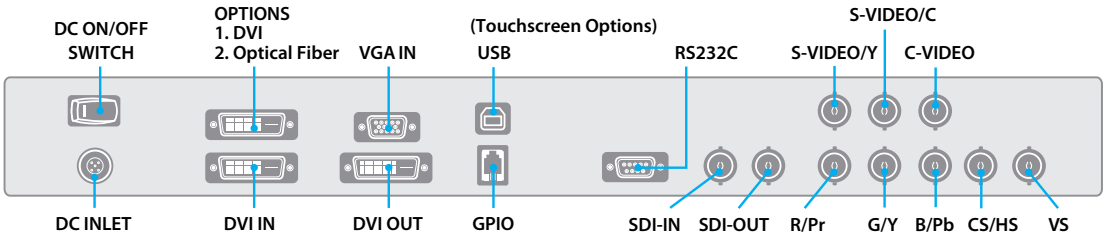
FS-P2601D, FS-P2601D(TOUCH), FS-P2602D

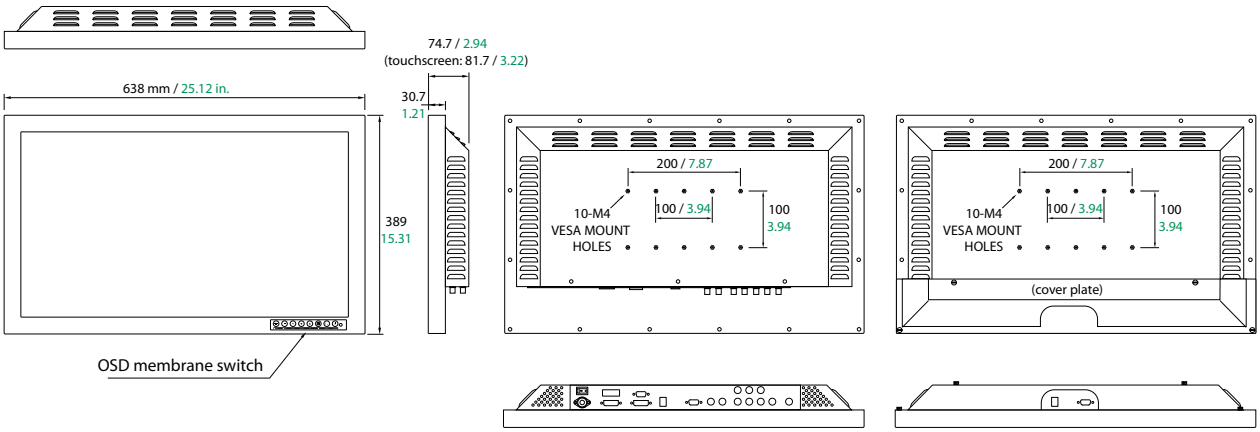
26" HD Medical Display

The popular 26" models from FSN feature everything needed for displaying high definition surgical images. FS-P2602D employs a unique process during manufacturing that increases contrast ratio and life-like image quality.

Key Features

- LED backlight technology
- Rich blacks and brighter whites
- Optional infrared touch screen, USB interface, multi-touch support using finger, gloved finger, or stylus pen





Signal Timing

Input Signal	Type	Description
VGA Video	Type	Analog RGB
	Connector	DSUB-15
	Level	0.7Vp-p ±5%
	Polarity	Positive
	Impedance	75 ohm ±5%
	Horizontal frequency	30 ~ 93KHz
	Vertical frequency	50 ~ 85Hz
	Applicable maximum pixel frequency	170MHz
	Max. resolution	1920x1080 / 60Hz (148.5MHz Timing, NON-CRT)
VGA Sync	Type	Separate H/V sync, Composite H/V sync, Sync On Green Automatic synchronization without external switch
	Level	TTL Level (V high ≥2.0V, V low ≤0.8V)
	Polarity	Positive or Negative
	Range	Automatic synchronization for applicable resolution modes which follows industrial standard within frequency range of 30 to 93KHz in horizontal and 50 to 85Hz in vertical
	Terminal resistance	more than 2KΩ

Input Signal	Type	Description
DVI	Type	Digital RGB
	Signal Format	TMDS single link
	Connector	DVI-D
C-Video	Type	Analog composite video
	Color system	NTSC, PAL
	Connector	BNC
S-Video	Type	Analog Y/C separated video
	Color system	NTSC, PAL
	Connector	BNC
SDI	SMPTE-424M	1080p
	SMPTE-292M	720p, 1080i
	SMPTE-259M	480i, 576i

Output Signal	Type	Description
DVI	Type	Digital RGB
	Signal Format	TMDS single link
	Connector	DVI-D
SDI	SMPTE-424M	1080p
	SMPTE-292M	720p , 1080i
	SMPTE-259M	480i , 576i

FS-P2603D

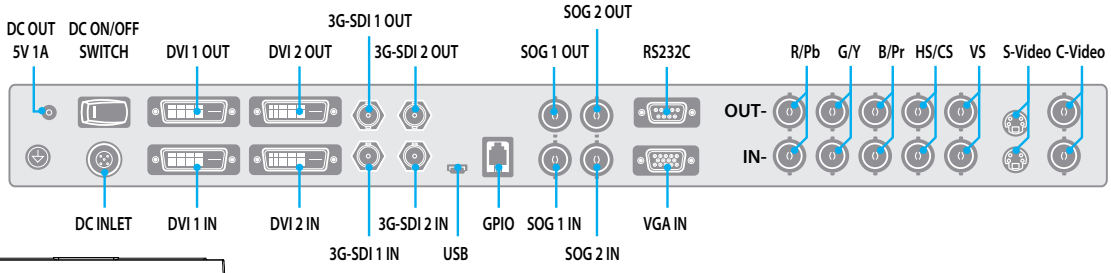
26" HD Medical Display

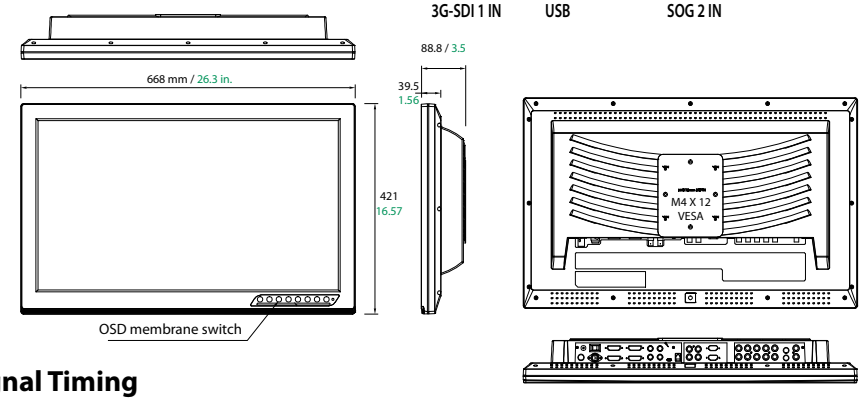
New!

As a new addition to the FSN display line, FS-P2603D has the latest advanced features built in. The input/output options have been expanded, including dual DVI and SDI, plus an on-board DC out power for smaller component needs.

Key Features

- LED backlight technology
- Dual DVI in/out and dual SDI in/out
- Engineered polymer housing





Signal Timing

Input Signal	Type	Description
VGA Video	Type	Analog RGB
	Connector	DSUB-15
	Level	0.7Vp-p ±5%
	Polarity	Positive
	Impedance	75 ohm ±5%
	Horiz. frequency	30 ~ 93KHz
	Vertical frequency	50 ~ 85Hz
	Applicable max. pixel frequency	170MHz
	Max. resolution	1920x1200 / 60Hz (154MHz Timing, NON-CRT)
VGA Sync	Type	Separate H/V sync, Composite H/V sync, Sync On Green Automatic synchronization without external switch
	Level	TTL Level (V high ≥2.0V, V low ≤0.8V)
	Polarity	Positive or Negative
	Range	Automatic synchronization for applicable resolution modes which follows industrial standard within frequency range of 30 to 93KHz in horizontal and 50 to 85Hz in vertical
	Terminal resistance	more than 2KΩ
DVI	Type	Digital RGB
	Signal Format	TMDS single link
	Connector	DVI-D
C-Video	Type	Analog Composite Video
	Color system	NTSC, PAL
	Connector	BNC

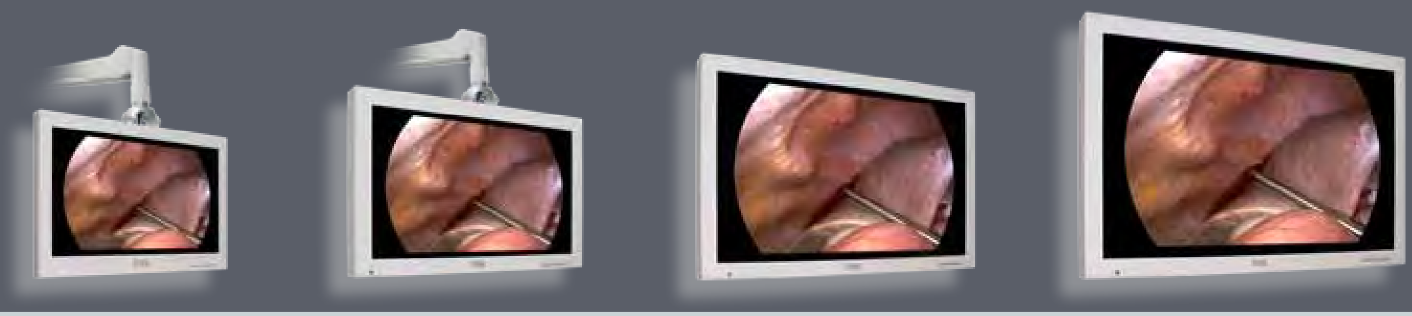
Input Signal	Type	Description
S-Video	Type	Analog Y/C Separated Video
	Color system	NTSC, PAL
	Connector	DIN
SDI	SMPTE-424M	1080p
	SMPTE-292M	720p, 1080i
	SMPTE-259M	480i, 576i
Component Video	Type	Analog Y/G, Pb/B, Pr/R
	Connector	BNC
	Level	0.7Vp-p ±5%
	Polarity	Positive
	Impedance	75 ohm ±5%
	Horizontal frequency	30 ~ 93KHz
	Vertical frequency	50 ~ 85Hz
	Applicable max. pixel frequency	170MHz
	Maximum resolution	1920x1080 / 60Hz (148.5MHz Timing, NON-CRT)
Component Sync	Type	H/CS,VS
	Level	TTL Level (V high ≥2.0V, V low ≤0.8V)
	Polarity	Positive or Negative
	Connector	BNC
SOG	Type	Sync on green
	Input Signal Level	1.0Vp-p (Video :0.7Vp-p / Sync : 0.3Vp-p)
	Impedance	75 ohm ±5%
	Input Signal Frequency	MAX. 162MHz

Output Signal	Type	Description
DVI	Type	Digital RGB
	Signal Format	TMDS single link
	Connector	DVI-D
C-Video	Type	Analog composite video
	Color system	NTSC, PAL
	Connector	BNC
S-Video	Type	Analog Y/C separated video
	Color system	NTSC, PAL
	Connector	DIN
SDI	SMPTE-424M	1080p
	SMPTE-292M	720p, 1080i
	SMPTE-259M	480i, 576i
Component Video	Type	Analog Y/G, Pb/B, Pr/R
	Connector	BNC
	Level	0.7Vp-p ±5%
	Polarity	Positive
	Impedance	75 ohm ±5%
	Horizontal frequency	30 ~ 93KHz
	Vertical frequency	50 ~ 85Hz
	Applicable max. pixel frequency	170MHz
	Maximum resolution	1920x1080 / 60Hz (148.5MHz Timing, NON-CRT)
Component Sync	Type	H/CS,VS
	Level	TTL Level (V high ≥2.0V, V low ≤0.8V)
	Polarity	Positive or Negative
	Connector	BNC
SOG	Type	Sync on green
	Input Signal Level	1.0Vp-p (Video :0.7Vp-p / Sync : 0.3Vp-p)
	Impedance	75 ohm ±5%
	Input Signal Frequency	MAX. 162MHz

FSN Medical Technologies

Medical Display Specifications

		FS-L1901D	FS-L2401D	FS-P2601D	FS-P2602D
LCD Panel	Panel Type	19 inch TFT LCD (IPS)	24 inch TFT LCD (IPS)	26 inch TFT LCD (IPS)	26 inch enhanced TFT LCD (IPS)
	Aspect Ratio	5:4	16:10	16:9	16:9
	Resolution	1280x1024 (SXGA)	1920x1200 (WUXGA)	1920x1080 (HD 1080)	1920x1080 (HD 1080)
	Surface Luminance	270	400	450	500
	Contrast Ratio	800 : 1	1000 : 1	1400 : 1	1500 : 1
	Display Colors	16.7M	1.06 Billion	1.06 Billion	1.06 Billion
	Response Time(G-to-G)	9 ms (avg.)	6 ms (avg.)	8 ms (avg.)	8 ms (avg.)
	Pixel Pitch	0.294 mm x 0.294 mm	0.270 mm x 0.270 mm	0.3 mm x 0.3 mm	0.3 mm x 0.3 mm
	Viewing Angle	R/L 170, U/D 170	R/L 178, U/D 178	R/L 178, U/D 178	R/L 178, U/D 178
	Backlight System	CCFL	CCFL	Edge LED	Edge LED
	Color Depth	8 bit	10 bit	10 bit	10 bit
Display General	Dimension(mm)	423(W) x 351.5(H) x 76.5(D)	580(W) x 386(H) x 95(D)	638(W) x 389(H) x 74.7(D) 81.7(D-TOUCH)	638(W) x 389(H) x 74.7(D)
	Dimension(Inch)	16.653(W) x 13.838(H) x 3.011(D)	22.834(W) x 15.196(H) x 3.740(D)	25.118(W) x 15.315(H) x 2.941(D) 3.22(D-TOUCH)	25.12(W) x 15.32(H) x 2.94(D)
	Weight (Kg)	7.3Kg	7.5Kg	7.6Kg (8Kg-TOUCH)	7.6 Kg
	Weight (lbs)	16.09 lbs	16.53 lbs	16.76lbs (17.64lbs-TOUCH)	16.7 lbs
	Mounting	100 x 100 mm, M4	100 x 100 mm, M4	100 x 100 mm, M4 100 x 200 mm, M4	100 x 100 mm, M4 100 x 200 mm, M4
	Input Power	DC 12V, 7A Max	DC 24V, 6.25A Max	DC 24V, 6.25A Max	DC 24V, 6.25A Max
	Power Supply	External	External	External	External
	Enclosure Material and Rating	Aluminum - IPX1	Aluminum - IPX1	Aluminum - IPX1	Aluminum - IPX1
	Front Filter	Anti-Reflection Coating	Anti-Reflection Coating	Anti-Reflection Coating	Anti-Reflection Coating
Display Connectivity	Input	1 x DVI-D 1 1 x VGA (D-sub) 1 x SD/HD/3G-SDI (BNC) 1 x C-Video (BNC) 2 x S-Video (Y/C) (BNC) 1 x Component**	1 x DVI-D 1 1 x DVI-D 2* 1 x VGA (D-sub) 1 x SD/HD/3G-SDI (BNC) 1 x C-Video (BNC) 2 x S-Video (Y/C) (BNC) 1 x Component**	1 x DVI-D 1 1 x DVI-D 2* 1 x VGA (D-sub) 1 x SD/HD/3G-SDI (BNC) 1 x C-Video (BNC) 2 x S-Video (Y/C) (BNC) 1 x Component**	1 x DVI-D 1 1 x DVI-D 2* 1 x VGA (D-sub) 1 x SD/HD/3G-SDI (BNC) 1 x C-Video (BNC) 2 x S-Video (Y/C) (BNC) 1 x Component**
	Output	1 x DVI-D 1 x SD/HD/3G-SDI (BNC)	1 x DVI-D 1 x SD/HD/3G-SDI (BNC)	1 x DVI-D 1 x SD/HD/3G-SDI (BNC)	1 x DVI-D 1 x SD/HD/3G-SDI (BNC)
Display Control	External Control	RS-232C	RS-232C	RS-232C	RS-232C
	GPIO Port	Swap, PIP / PBP1 / PBP2 Select, Record indicator	Swap, PIP / PBP1 / PBP2 Select, Record indicator	Swap, PIP / PBP1 / PBP2 Select, Record indicator	Swap, PIP / PBP1 / PBP2 Select, Record indicator
	Sync On Green (SOG)	Yes	Yes	Yes	Yes
	Hand Remote	NA	NA	NA	NA
Image Control	Layout	Picture-in-Picture, Picture-by-Picture, Pan, Zoom, Freeze	Picture-in-Picture, Picture-by-Picture, Pan, Zoom, Freeze	Picture-in-Picture, Picture-by-Picture, Pan, Zoom, Freeze	Picture-in-Picture, Picture-by-Picture, Pan, Zoom, Freeze
	Touch Screen	Optional	Optional	Optional	Optional
Certifications		FDA Class I, UL 60601-1, CAN/CSA-C22.2 No.601.1-M90, FCC Part 15			



FS-P2603D	FS-L3201D	FS-L4202D	FS-L5501D
26 inch TFT LCD (IPS)	32 inch TFT LCD (IPS)	42 inch TFT LCD (IPS)	55 inch TFT LCD (IPS)
16:9	16:9	16:9	16:9
1920x1080 (HD 1080)	1920x1080 (HD 1080)	1920x1080 (HD 1080)	1920x1080 (HD 1080)
450	500	500	450
1400 : 1	1300 : 1	1300 : 1	1300 : 1
1.06 Billion	1.06 Billion	1.06 Billion	1.06 Billion
8 ms (avg.)	6 ms (avg.)	5 ms (avg.)	9 ms (avg.)
0.3 mm x 0.3 mm	0.363 mm x 0.363 mm	0.4845 mm x 0.4845 mm	0.630 mm x 0.630 mm
R/L 178, U/D 178	R/L 178, U/D 178	R/L 178, U/D 178	R/L 178, U/D 178
Edge LED	CCFL	CCFL	Edge LED
10 bit	10 bit	10 bit	10 bit
668(W) x 421(H) x 88.8(D)	795(W) x 485(H) x 100(D)	1024.6(W) x 617.4(H) x 111.1(D)	1293(W) x 777(H) x 86.3(D)
26.299(W) x 16.574(H) x 3.496(D)	31.299(W) x 19.094(H) x 3.937(D)	40.338(W) x 24.307(H) x 4.374(D)	50.906(W) x 30.59(H) x 3.398(D)
8.2 Kg	15.8Kg	28Kg	37Kg
18 lbs	34.8 lbs	61.7 lbs	81.57 lbs
100 x 100 mm, M4	100 x 100 mm, M4 300 x 100 mm, M4 400 x 200 mm, M6	600 x 200 mm, M8 600 x 300 mm, M8 600 x centerline, M8	600 x 400 mm, M8 600 x centerline, M8
DC 24V, 6.25A Max	DC 24V, 7.5A Max	AC 100~230V, 50~50Hz, 3A Max	AC 100~230V, 50~50Hz, 3A Max
External	External	Internal	Internal
Polymer - IPX1	Aluminum - IPX1	Aluminum - IPX1	Aluminum - IPX1
Anti-Reflection Coating	Anti-Reflection Coating	Anti-Reflection Coating	Anti-Reflection Coating
2 x DVI-D 2 x SD/HD/3G-SDI (BNC) 2 x SOG 1 x VGA (D-sub) 1 x C-Video (BNC) 1 x S-Video (DIN) 1 x Component**	1 x DVI-D 1 1 x DVI-D 2* 1 x VGA (D-sub) 1 x SD/HD/3G-SDI (BNC) 1 x C-Video (BNC) 2 x S-Video (Y/C) (BNC) 1 x Component**	1 x DVI-D 1 1 x DVI-D 2* 1 x VGA (D-sub) 1 x SD/HD/3G-SDI (BNC) 1 x C-Video (BNC) 2 x S-Video (Y/C) (BNC) 1 x Component**	1 x DVI-D 1 1 x DVI-D 2* 1 x VGA (D-sub) 1 x SD/HD/3G-SDI (BNC) 1 x C-Video (BNC) 2 x S-Video (Y/C) (BNC) 1 x Component**
2 x DVI-D 2 x SD/HD/3G-SDI (BNC) 2 x SOG 1 x C-Video (BNC) 1 x S-Video (DIN) 1 x Component**	1 x DVI-D 1 x SD/HD/3G-SDI (BNC)	1 x DVI-D 1 x SD/HD/3G-SDI (BNC)	1 x DVI-D 1 x SD/HD/3G-SDI (BNC)
RS-232C	RS-232C	RS-232C	RS-232C
Swap, PIP / PBP1 / PBP2 Select, Record indicator	Swap, PIP / PBP1 / PBP2 Select, Record indicator	Swap, PIP / PBP1 / PBP2 Select, Record indicator	Swap, PIP / PBP1 / PBP2 Select, Record indicator
Yes	Yes	Yes	Yes
NA	Yes	Yes	Yes
Picture-in-Picture, Picture-by-Picture, Pan, Zoom, Freeze	Picture-in-Picture, Picture-by-Picture, Pan, Zoom, Freeze	Picture-in-Picture, Picture-by-Picture, Pan, Zoom, Freeze	Picture-in-Picture, Picture-by-Picture, Pan, Zoom, Freeze
Optional	Optional	Optional	Optional

Class B, MDD Class I, IEC60601-1, EN60601-1-2, CCC & IEC60950-1(FS-L1901D,FS-L2401D,FS-P2601D,FS-P2603D)

* Optional, Fiber DVI receiver DDL-Rx, DSP-Rx, DSL-Rx detachable ** Component (RGBS, YPbPr) (5 x BNC)

Medical Image Processing

IPS1000A

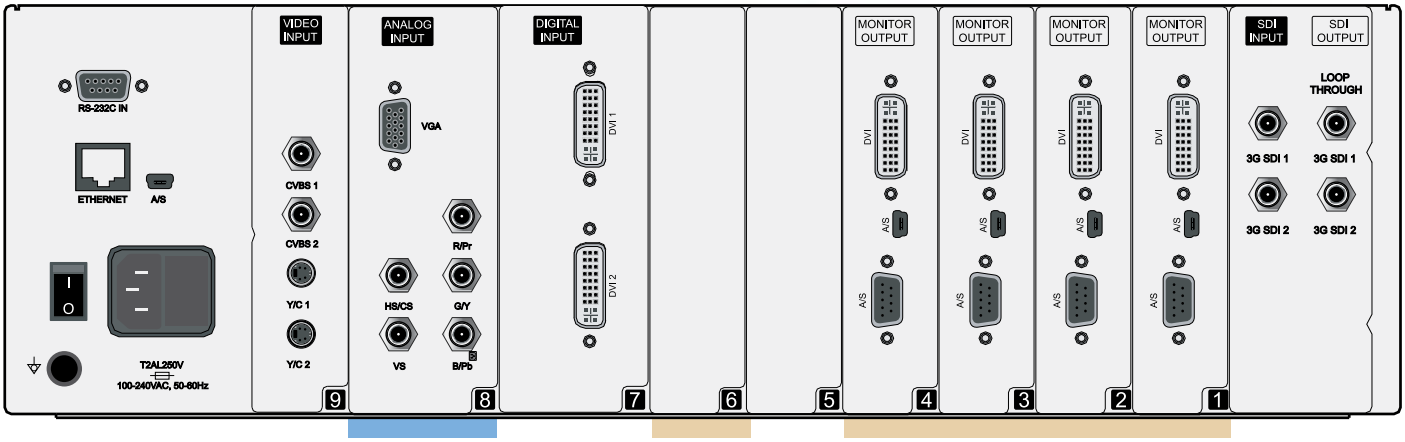
Control OR

Take control of the variety of imaging equipment that is present in today's medical environment. The ability to standardize and control video signals is essential, especially with the need to share a common video display system. Control OR can scale, format, and split video signals based upon what is needed. The system features 10 input and 5 output capability.

Harness the power of Control OR, wirelessly, throughout the operating room, by using the intuitive interface on FSN's touch screen tablet. A secure docking station is available to hold and charge the tablet.

Key Features

- Simultaneous distribution of signal sources to one or more displays
- Input/output connections using analog, digital and fiber standards
- Picture-in-picture, picture-by-picture, picture-on-picture capabilities
- Configure video distribution via touch screen tablet interface
- Upgrades and maintains signal integrity



Can be changed to DVI or optical fiber

DVI or streaming output can be added

Can be changed to SDI or optical fiber

General Specifications

Item	Description
Input - standard configuration	DVI-D x 2, VGA (D-sub) x 1, Component (BNC) x 1, C-Video (BNC) x 2, S-Video (DIN) x 2, SD/HD/3G-SDI (BNC) x 2
Input - available options	Additional DVI-D, Optical Fiber
Output - standard configuration	DVI-D x 4, RS232C x 4, SD/HD/3G-SDI (BNC) x 2
Output - available options	Additional DVI-D, SD/HD/3G-SDI (BNC), Optical Fiber (SC), Streaming
Control key	7 button (Display, Source, Plus, Minus, Select, PiP, Stream)
OSD language	English
Power	AC 100~240V / 50~60Hz , 2A(max)
Serial communication	RS-232C 115200 baud Rx
Network	Ethernet TCP/IP 10/100 base TX (Auto sensing)
Compliance & Certifications	FDA Class I, UL 60601-1, CAN/CSA-C22.2 No.601.1-M90, FCC Part 15 Class B, MDD Class I, IEC60601-1, EN60601-1-2, CCC & IEC60950-1
Size (Wx D x H)	437 (17.205)x 380 (14.961) x 139.5 (5.492) mm/(inch)

Wireless Medical Images

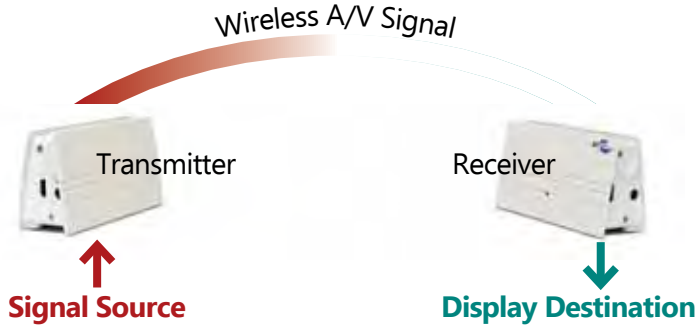
WIS1000

Wireless Transmission

Hard-wired video connections in the OR may not be best for all applications. With FSN's wireless system, video carts or stands can be completely mobile, allowing for flexible equipment layouts. Fewer wires on the OR floor can help eliminate tripping hazards. Without the need to connect and disconnect wires from equipment, turn-around time in the OR is fast and efficient.

Key Features

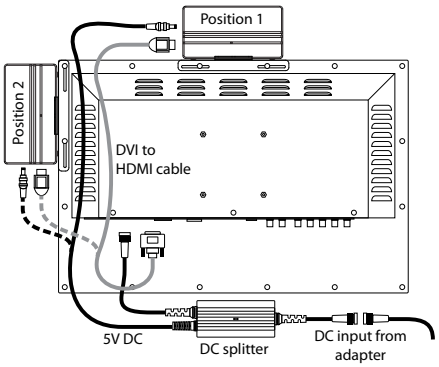
- HD video transmission without compression
- Zero latency, video image does not lag or stall
- Signal is encrypted and bonds 1-to-1, no crosstalk
- Range is designed to stay within one room
- FDA 510k clearance



WIS1001

Signal Conditioner

The WIS1001 is a converter and scaler created to provide a "clean" output signal complying with industry standards. It shapes and synchronizes a video signal, up or down, in order to make the signal compatible with wireless transmission. WIS1001 is designed primarily to be used with FSN's WIS1000 wireless transceiver system.



Use Power from the Display

The DC Splitter is a convenient way to further reduce cords and wires from a video display system. It uses power from a monitor's cord and connects to the WIS1000 wireless unit.

General Specifications

Item	Description
Standards	WIS1000 WirelessHD, HDMI(V1.4a)
Frequency	60 GHz
Input/Output Interface	HDMI interface
Antenna Type	32 Antenna Array (Integrate Ceramic)
Range	10 meters in-room usage
AV Port	Transmitter : 1 Port (CEC pass through) Receiver : 1 Port (CEC pass through)
Physical Specifications	Weight : 242 g (TX) / 242 g (RX) Dimension : 162.0 * 86.0 * 50.0 mm (Tx) and (Rx)
Adapter Power	AC/DC adapter, BPM010S05F02 AC 90-240~ ,50-60Hz input, DC +5V 2.0A
LED Indicators	One LED display, power indication
Environment Specification	Operating Conditions Temperature: 0°C ~ 40°C (32° ~ 104°F) Humidity: 5% ~ 85%
Compliance & Certifications	FDA Class II 510(k), UL 60601-1, CAN/CSA-C22.2 No.601.1-M90, FCC Part 15C, MDD Class I, IEC60601-1, EN60601-1-2, R&TTE(EN301 489-1, EN301 489-17, EN302-567, EN62311, EN60950-1)

Medical Digital Video Recorder

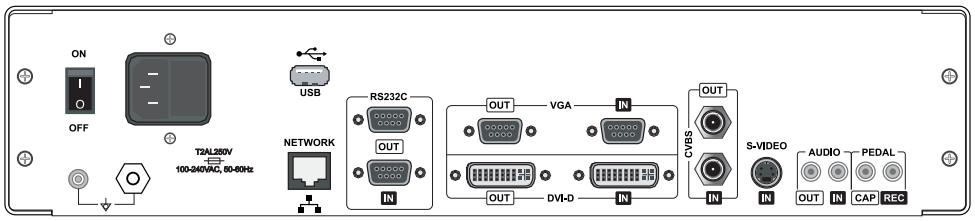
IPS700A

HD Video Recording System

The IPS700A is easy to operate, is HIPAA compliant, and supports several methods for storing video content for later playback.

Key Features

- Captures and records in full HD
- 1 terabyte internal storage
- Send files to CD, DVD, Blu-ray, USB memory stick, or FTP server
- Optional equipment: Configure via a tablet interface using Wi-Fi or USB (Android Open Accessory) connection



Inputs		Remarks
HD-Digital Input	DVI-D	Up to 1920x1080p/60
S-Video	SVHS jack x 1ea	NTSC, PAL (BNC)
Composite Video	BNC x 1ea, 75Ω	NTSC, PAL (BNC)
Analog RGB	DSUB15 x 1ea	Up to 1920x1080p/60 (DSUB)
Audio	Stereo x 1ea 3.5mm phone jack	Analog line In/Out

Only one input amoung the digital input, S-video input and composite can be recorded.

Outputs		Remarks
Digital Output	DVI-D x 1ea	Monitor out playback monitoring
Analog Output	DSUB15 x 1ea	
Video Output	BNC jack x 1ea, RCA x 1ea	

Control Inputs/Miscellaneous		Remarks
DB9	x1ea, RS-232C	
RJ-45	x1ea, LAN	
USB	x2ea, Memory, Download	1 for capture/recording, 1 for service
Foot Pedal	x2ea, 3.5mm stereo jack	1 for still image capture, 1 for motion image recording

Recordable Media		Remarks
Primary (Internal HDD)	1TB standard, FAT32 Format	SATAII
Backup (Internal Blu-ray)	DVD Disk	NTSC/PAL input DVD-R, DVD-RW: AVI DVD+R, DVD+RW: AVI Recordable capacity: Max. 8.5 GB (DL Disc)
	Blu-ray Disk	High-Definition BD-R, BD-RE: AVI Recordable capacity: Max. 50 GB (DL Disc)
Backup (External USB)	USB Flash Drive USB HDD Drive	NTSC/PAL input: AVI High-Definition: AVI Recordable capacity: Max. 2 TB

*Direct recording to backup device is not confirmed yet due to recording speed.

Recording Format		Remarks
NTSC/PAL	720x480P/60fps	Auto Mode : auto format by input resolution. Manual Mode : format by manual setting.
SVGA/XGA/SXGA	1280x720p/60fps	
1080i/1080p	1920x1080p/30fps	

Video & Audio Format		
Still capture	Lossless JPEG, BMP, DICOM	
Motion capture	H-264	AVC / H.264
Streaming	H-264	
Audio	PCM	

General		
Power Requirements	AC 110 - 220 Volts	
Dimensions (W x H x D)	355mm x 380mm x 80mm	Excluding foot
Weight	4.8Kg	
Temperature	Operating: 0 to +40° C (+32 to +104° F) Storage: -20 to + 60° C (-4 to +140° F)	
Humidity	Operatiog: 5 - 85% RH	Storage: 10 - 85% RH

Compliance & Certifications
FDA Class I, UL 60601-1, CAN/CSA-C22.2 No.601.1-M90, FCC Part 15 Class B, MDD Class I, IEC60601-1, EN60601-1-2, CCC & IEC60950-1

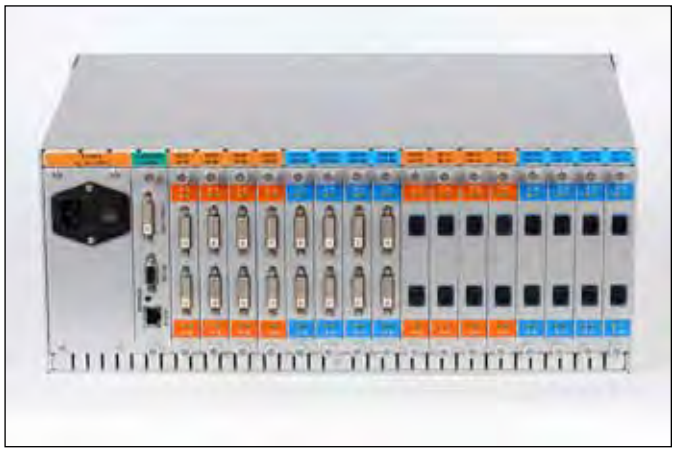
Information Display		
Character LCD	2x16 Characters, Information Display	
Input keys	9 buttons	Source, Rec, Stop, Up, Down, Plus, Minus, Enter, Menu

Switching and Scaling

DMS-H1616

16x16 Matrix Switcher

The DMS-H1616 is designed for switching up to 16 input DVI source signals to 16 output destinations. The optical fiber option is available for use with long distance transmission applications (max. distance 300m at WUXGA (1920x1200)). When using multi-mode 1 fiber cable, it is possible to use DVI transmission and maintain compatibility with FSN's signal extending products. Intuitive control for external equipment is possible via the internet when using the RS232 port. In addition, the DSM-H1616's firmware can be upgraded through the internet.



Key Features

- Support 16 channels DVI-D Single-link input and 16 channels DVI-D Single-link output
- The EDID parameter of the monitor can be preset or default
- Save the last operation parameters when power suddenly shut off
- Support RS-232 & WEB control
- Support Network control based on TCP/IP
- Built in signal generator for testing and debugging systems

MSV

Multi-Scaler Viewer

MSV is an ideal solution for applications where up to four video signals must be displayed on a single display. MSV allows you to manipulate the size and position of images on your output display device, and also allows you to control functions such as brightness and overlay. The embedded scaler converts signals from an input source to match user-selectable output settings up to 1080p.

Key Features

MSV uses modular type DVI, D-Sub, SDI and HDMI input and output cards for flexibility on application, and to reduce cost by avoiding purchase of unnecessary hardware.

Signal Conversion

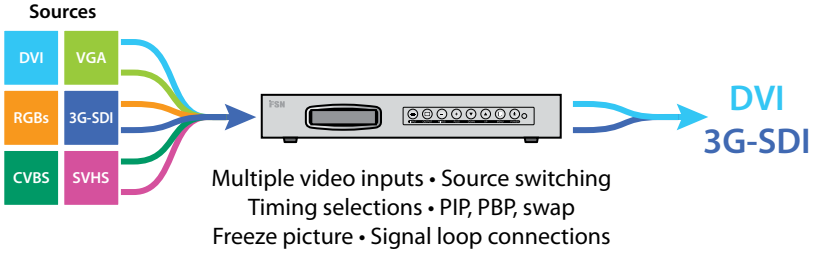
IPS500A

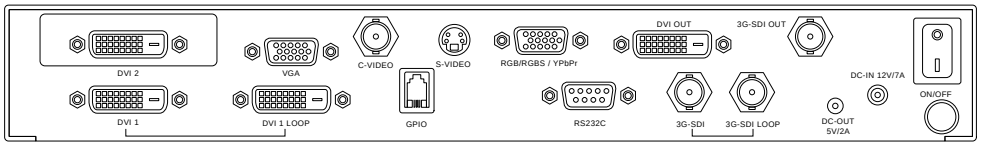
Universal Converter

This multi-signal format converter makes signal routing, scaling and converting easier. It is a cost effective solution to managing different types of medical equipment video signal variations.

Key Features

- Input: 1 x DVI-D, 1 x DVI-D (Fiber DVI detachable), 2 x D-SUB(VGA, Component, RGBs), 1x BNC (3G-SDI), 1 x BNC (CVBS), 1 x DIN (SVHS)
- Output: 1 x DVI-D, 1 x BNC (3G-SDI)
- Controlled using an intuitive key pad or RS-232C command interface
- Supports output resolution up to 1920 x 1200 for DVI, and 1920 x 1080p for 3G-SDI





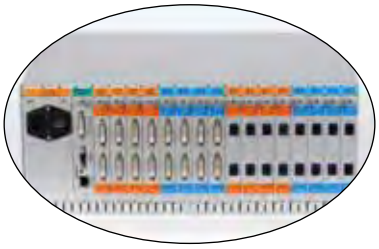
CVBXB, CVBXW series

Optical Converters

Model	Model	Input	Output
CVBXB-DVI	CVBXW-DVI	HDMI A type (Female) 15pin D-sub (Female)	- 15pin D-sub (Female) - DVI-I (Female) - S-video (Female) - 75Ω BNC (Female) - RCA (Female)
CVBXB-VGA	CVBXW-VGA	DVI-I (Female) 15pin D-sub (Female)	- 15pin D-sub (Female) - DVI-I (Female) - 75Ω BNC (Female)
CVBXB-SDI	CVBXW-SDI	15pin D-sub (Female) DVI-D (Female) 75Ω BNC RCA (Female)	DVI-I (Female)
CVBXB-SVID	CVBXW-SVID	15pin D-sub (Female)	15pin D-sub (Male) DVI-I (Female)

Free-standing series

Wall plate series



CVBXB and CVBXW series converters are ideal for use with DMS-H1616 Matrix Switcher.

	Model	Input	Output
Multi-format Converters	UVC-S100	HDMI A type (Female) 15pin D-sub (Female)	- 15pin D-sub (Female) - DVI-I (Female) - S-video (Female) - 75Ω BNC (Female) - RCA (Female)
	UVC-100	DVI-I (Female) 15pin D-sub (Female)	- 15pin D-sub (Female) - DVI-I (Female) - 75Ω BNC (Female)
	DAU	15pin D-sub (Female) DVI-D (Female) 75Ω BNC RCA (Female)	DVI-I (Female)
VGA to DVI	DAD-U100	15pin D-sub (Female)	15pin D-sub (Male) DVI-I (Female)
DVI to VGA	DDAP	DVI-I (Female)	15pin D-sub (Female)
	DDA	DVI-I (Female)	15pin D-sub (Male)
	DDAX	DVI-I (Female)	15pin D-sub (Female) DVI-I (Female)
HDMI to VGA/Audio	HDA	HDMI A type (Female)	15pin D-sub (Female) Mini audio jack (Female)
HDMI to SDI	HSC	HDMI A type (Female)	75Ω BNC (Female) x 2
SDI TO HDMI	SHC	75Ω BNC (Female)	HDMI A type (Female) 75Ω BNC (Female)

DAU

DAD-U100

DDA

SHC

Optical Signal Extension

DSL

DQSP

HSP

HDMB

SDL

Model	Connections	Description
DSP	DVI-D (Male) SC connector (Female)	Optical DVI 1 Ch Bi-directional Extender
DSH	DVI-D (Male) SC connector (Female)	Optical DVI 1 Ch Bi-directional Extender Pigtail design
DOL	DVI-D (Male) LC connector (Female)	Optical DVI 1 Ch Bi-directional Extender
DSL	DVI-D (Male) SC connector (Female)	Optical DVI 1 Ch Extender
DDL	DVI-D (Male) LC connector (Female)	Optical DVI 4 Ch Extender
DDI	DVI-D (Male)	Optical DVI Cable
DQSP	DVI-D (Male) SC connector (Female)	Optical DVI Dual Link 2 Ch Extender
DQSL	DVI-I (Female) LC connector (Female) RJ-45 Jack (Female)	Optical DVI Dual Link 2 Ch Extender
DQL	DVI-I (Female) LC connector (Female) RJ-45 Jack (Female)	Optical DVI Dual Link 7 Ch Extender
DAS	DVI-I (Female) SC connector (Female)	Optical DVI Long Distance Extender
HSP	HDMI A type (Male) SC connector (Female)	Optical HDMI 1 Ch Bi-directional Extender Pigtail design
HDMB	HDMI A type (Male)	Optical HDMI Cable
DSFP	DisplayPort 20pin (Male) SC connector (Female)	Optical DisplayPort 1 Ch Extender Pigtail design
DPM	DisplayPort 20pin (Male)	Optical DisplayPort Cable
SDL	75ohm SDI BNC Optical: St, SC, FC	Optical SDI Extender
EHDB	HDMI 19Pin (Male)	HDMI/DVI Copper Cable

FSN
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Our Focus –
Your Medical Video Solutions

FSN offers a new approach…as a full-service signal systems provider, we enable our partner's surgical products to benefit patient outcomes.

Compatibility, Source to Destination

Our solutions are engineered for compatibility with other highly specialized surgical and diagnostic equipment used in surgical suites, operating rooms, emergency rooms, and procedural facilities.

Global Reach, Manufacturing Control

FSN responds to the growing demand from our medical device customers for design, development and manufacture. We listen to the needs of the worldwide medical video community, and tailor the latest technologies to medical applications.

FSN
Medical Technologies

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