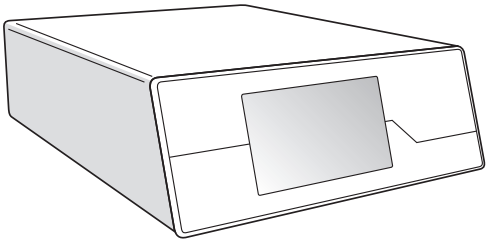


FSN

Image Processing System

Instructions for Use

IPS720
Video Recorder for Medical Use

IPS740DS
IPS740DG
Video Recorder for Medical Use

Before connecting, operating or adjusting this product, please read this instruction booklet carefully and completely.

English

Table of Contents

The specifications and information in this document are subject to change without notice.

Instructions for Use for this product are also available in electronic form (eIFU). Choose from several languages. Use Adobe Acrobat software to view eIFUs. Access the eIFUs online at: fsnmed.com/support/eifu/

Product Description / Intended Use

IPS720

IPS720 offers HD photo capture (up to 1920x1080p) and medical session video recording (up to 1080p 60Hz).

The system will simultaneously record to the 2 terabyte internal hard disk drive and an external USB flash drive. In addition, IPS720 can record 2 sources at once, and play back 1 or 2 sources from the same video file.

User interface control is managed through the screen and buttons on front of the unit, or an external monitor with either touchscreen or mouse and keyboard. IPS720 integrates easily into medical IT workflows.

IPS740DS
IPS740DG

IPS740DS, DG is an all-in-one 4K medical video recording system that captures still images or records extended sessions of video signals for later playback or transfer to other media.

All recorded files are stored on an internal hard disk drive. These files can then be played back on a display monitor, or transferred to variety of media including external drives, memory sticks, and network folders or servers.

System controls are managed through a graphic interface shown on the front LCD screen, or on a connected external monitor.

Intended Purpose

This device is intended to be connected to other medical equipment. This device is not intended for diagnosis. This device is intended to be compatible with other highly specialized surgical and diagnostic equipment used in surgical suites, operating rooms, emergency rooms, and procedural facilities.

Intended Use Environment

This device is intended to be used by a trained medical professional in a healthcare facility setting where contact with a patient is unlikely (no applied part).

This device is designed to meet the medical safety requirements for a patient vicinity device.
Warning: This device may not be used in connection with life support equipment.

Indications for Use

This device is to be used by a trained medical professional. This device records and stores video and still images during surgical procedures for later playback or transfer to other media. This device is not intended for diagnosis.

Symbol Definitions

The following symbols appear on the product, its labeling, or the product packing. Each symbol carries a special definition, as defined below:

	Dangerous : High Voltage		Power adapter		Consult accompanying documents
	Direct current		Indicates equipotential earth ground		Unique Device Identifier
	Indicates protective earth ground		Indicates top-bottom direction		Korea Certification
	DC Power control switch		Fragile		Approved according to the CCC regulations
	Do not get wet		Maximum Stacking		China RoHS labels
	Consult the operating instructions		Indicates the manufacturer		Catalog Number
	Indicates the manufacturing date		Authorized representative in the European community		Medical Device
	Serial Number		Humidity limitation		Consult the operating instructions - electronic
	Temperature limitation		Atmospheric pressure limitation		Importer Entity
	UK Conformity Assessed		Power ON		Power OFF
	UK Responsible Person				
	Indicates proof of conformity to EU 2017/745 Medical Devices Regulation and applicable standards.				
	Medical Equipment is in accordance with ANSI/AAMI ES60601-1 (2005) + AMD 1 (2012) and CAN/CSA-C22.2 No. 60601-1 (2014) in regards to electric shock, fire hazards, and mechanical hazard.				
	Tested to comply with FCC Class B standard (USA).				
	Waste electrical and electronic equipment (WEEE Directive 2012/19/EU). This symbol indicates that the waste of electronic equipment must not be disposed as unsorted municipal waste and must be collected separately. Please contact the manufacturer or other authorized disposal company to decommission your equipment.				

Note: A printed copy of the manual in English is provided with the product. Users within EU member states, please contact local distributor for other languages. This applies to EU member states where the product has been purchased through authorized channels.

Warnings and Precautions

Caution Information

This symbol alerts the user that important literature concerning the operation of this unit has been included. Therefore, it should be read carefully in order to avoid potential problems.

This symbol warns users that un-insulated voltage within the unit may have sufficient magnitude to cause electrical shock. Therefore, it is dangerous to make contact with any part inside the unit. To reduce the risk of electrical shock, DO NOT remove cover (or back). There are no user-serviceable parts inside. Refer servicing to qualified service personnel.

To prevent fire or shock hazards, do not expose this unit to rain or moisture. Do not use this unit's polarized plug with an extension cord receptacle or other outlets unless the prongs can be fully inserted.

Underwriters Laboratories (UL) Classification:
UL safety Compliance:
This device is U.L. Classified WITH RESPECT TO ELECTRIC SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH UL 60601-1/CAN/CSA C22.2 NO. 601.1

EU Conformity and EMC Compliance:
This device meets the requirements of EN60601-1 and EN60601-1-2 so as to conform to the EU Medical Devices Regulation (MDR 2017/745). CE class I medical device accessory.

Use 120V rating 5-15P type plug only in the U.S.

Caution: Make sure the power cord is the correct type that is required in your geographic area. This device has a universal power supply that allows operation in either 100-120V AC or 200-240V AC voltage areas (no user adjustment is required).

Use the proper power cord with correct attachment plug type. If the power source is 120 V AC, use a power cord which is a Hospital Grade Power Cord with NEMA 5-15 style plug, labeled for 125 volts AC with UL and C-UL approvals. If the power source is a 240 V AC supply, use the tandem (T blade) type attachment plug with ground conductor power cord that meets the respective European country's safety regulations.

Recycling (WEEE Directive 2012/19/EU)

Follow local governing ordinances and recycling plans regarding the recycling or disposal of this equipment.

Warning: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

Warning: Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

Warning: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of this device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

Warning: Using this equipment in the X-ray or magnetic resonance environment could result in degradation of the performance of this equipment, interference with other equipment or interference with radio services.

Warning: The use of cables and/or other accessories with this device, other than those specified, may result in increased emissions or decreased immunity of this device.

Warning: This product is not considered physically to connect to HF (High Frequency) electrosurgical equipment.

Warning: Not suitable for use in the presence of a flammable anesthetics mixture with oxygen or with nitrous oxide.

Safety Instructions

On Safety

1. Before connecting the power cord, make sure the voltage designation corresponds to the local electrical supply.

2. Never insert anything metallic into the cabinet openings of the device. Doing so may create the danger of electric shock.

3. To reduce the risk of electric shock, do not remove cover. No user-serviceable parts inside. Only a qualified technician should open the case of the device.

4. Never use the device if the power cord has been damaged. Do not allow anything to rest on the power cord, and keep the cord away from areas where people can trip over it.

5. Be sure to hold the plug, not the cord,when disconnecting the device power cord from an electric socket.

6. Unplug the device power cord when it is going to be left unused for an extended period of time.

7. Unplug the device power cord from the AC outlet before any service.

8. If the device does not operate normally, in particular, if there are any unusual sounds or smells coming from it, unplug it immediately and contact an authorized dealer or service center.

9. Please contact the manufacturer if the set should be installed in an inaccessible area.

Warning: Do not touch input or output connectors and the patient simultaneously.

Warning: This device is intended for connection to input/output signals and other connectors that comply with relevant IEC standard (e.g.,IEC60950 for IT equipment and IEC60601 series for medical electrical equipment). In addition, all such combination-system shall comply with the standard IEC 60601-1-1 or clause 16 of the 3 Ed. of IEC 60601-1, respectively, safety requirements for medical electrical systems. Any person who has formed a combination-system is responsible for the system to comply with the requirements of IEC 60601-1-1 or clause 16 of the 3 Ed. of IEC 60601-1, respectively. If in doubt, contact qualified technician or your local representative.

Warning: To avoid risk of electric shock, this device must only be connected to a supply mains with protective earth. Power supply is specified as a part of the device. Do not position equipment in such a way that it is difficult to disconnect the power cord plug from the appliance inlet.

Warning: Do not modify this equipment without authorization of the manufacturer.

Product fuse has a lower breaking capacity. Do not install at the building power system, prospective short-circuit current exceeding 35 A.

Environmental Conditions for Operation and Storage

Temperature range within 0°C to 40°C(operation), -20°C to 60°C (storage)
Relative humidity range 10% to 85%
Atmospheric pressure range within 500 to 1060hPa.

On Installation

1. Openings in the device cabinet are provided for ventilation. To prevent overheating, these openings should not be blocked or covered. If you put the device in a bookcase or some other enclosed space, be sure to provide adequate ventilation.

2. Do not expose the device to rain or use it near water. If the device accidentally gets wet, unplug it and contact an authorized dealer immediately. You can clean the device with a damp cloth if necessary, but be sure to unplug the device first.

3. Place your device near an easily accessible AC outlet.

4. High temperature can cause problems. Max operating temperature is 40°C. Don't use your device in direct sunlight and keep it away from heaters, stoves, fireplaces, and sources of heat.

5. Always use only the original cables and accessories with the device.

Repair

Do not attempt to service the device yourself, as opening or removing covers may expose you to dangerous voltages or other hazards, and will void the warranty. Refer all servicing to qualified service personnel. Unplug the device from its power source and refer servicing to qualified personnel under the following conditions:

- If the power cord or plug is damaged or frayed.
- If liquid has been spilled into the device.
- If objects have fallen into the device.
- If the device has been exposed to rain or moisture.
- If the device has been subjected to excessive shock by being dropped.
- If the cabinet has been damaged.
- If the device seems to be overheated.
- If the device emits smoke or abnormal odor.
- If the device fails to operate in accordance with the operating instructions.

Biohazards

To prevent spreading of infections, this device should only be used in environments where biological decontamination can be successfully performed.

Returned Product

After troubleshooting, if problems persist, disinfect the device and return it to FSN using the original packaging. Include the accessories that came with the device in the return shipment. Please enclose a brief explanation of the malfunction.

Contact FSN Medical Technologies for a Return Authorization Number and instructions, prior to returning the device.

Accessories

Use only accessories specified by the manufacturer, or sold with the device.

Classification for Safety Compliance

- Protection against electric shock : Class I including AC/DC adapter. This medical equipment is in accordance with ANSI/AAMI ES60601-1 (2005) + AMD 1 (2012) and CAN/CSA-C22.2 No. 60601-1 (2014) in regards to electric shock, fire hazards, and mechanical hazard.
- Applied Parts : No Applied Parts.
- Degree of safety in the presence of flammable anesthetics mixture with air or with oxygen or with nitrous oxide. Not suitable for use in the presence of a flammable anesthetics mixture with oxygen or with nitrous oxide.
- For critical applications, it is recommended to have a replacement device available.
- Mode of operation : Continuous.

Notice to the user:

Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established. Contact your local FSN Medical Technologies sales representative for information on changes and new products.

Electromagnetic Compatibility

This unit has been designed and tested to comply with IEC 60601-1-2:2014/AMD1:2020 requirements for EMC with other devices. To ensure electromagnetic compatibility (EMC), the device must be installed and operated according to the EMC information provided in this Instructions for Use.

This unit has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against interference. This device can radiate radio frequency energy and, if not installed and used in accordance with the instructions, it may interfere with other radio communications equipment. There is no guarantee that interference will not occur in a particular installation. If this equipment is found to cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by carrying out one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the device and the subject of interference.
3. Plug the device into an outlet on a different electrical circuit than that to which the subject of interference is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

NOTICES TO USER

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC WARNING

This device generates or uses radio frequency energy. Changes or modifications to this device may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose authority to operate this equipment if an unauthorized change or modification is made.

PRODUCT LIFETIME

The performance of this device may deteriorate over long periods of time. Periodically check that this device is operating correctly. The expected service life of the device is four years. Keep the device clean to prolong its operational lifetime.

1. Guidance and manufacturer's declaration - electromagnetic emission

The device is intended for use in the electromagnetic environment specified below. The user of the device should make sure that the device is operated in such an environment.		
Interference emission measurements	Conformity level	Electromagnetic environment -guidance
RF emissions acc. to CISPR 11	Complies with Group 1	The characteristics of this device determined by broadcasting permit its industrial and hospital use (CISPR 11, Class A). When used in a living area (for which CISPR 11 usually requires Class B), this device may not provide adequate protection of radio services. The user must, if necessary, take remedial action such as implementation or reorientation of the device.
RF emissions acc. to CISPR 11	Complies with Class B	
Emission of harmonic oscillations acc. to IEC 61000-3-2	Complies with Class A	
Voltage fluctuations/flicker emissions acc. to IEC 61000-3-3	Complies	

2. For the use of ME devices in professional healthcare facilities. Guidance and manufacturer's declaration - electromagnetic immunity

The device is intended for use in the electromagnetic environment specified below. The user of the device should make sure that it is used in such an environment.		
Interference immunity test	IEC 60601-1-2:2014 conformity level	Electromagnetic environment-guidance
Electrostatic discharge (ESD) acc. to IEC 61000-4-2	Complies ±2 kV, ±4 kV, ±6 kV, ± 8 kV contact discharge ±2 kV, ±4 kV, ±8 kV, ± 15 kV air discharge	Floors should be made of wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity must be at least 30%
Rapid transient electric interferences/ bursts acc. to IEC 61000-4-4	Complies ± 2 kV for mains lines ± 1 kV for input/output lines	The quality of the supply voltage should correspond to that of a typical business or hospital environment.
Surge acc. to IEC 61000-4-5	Complies ± 1 kV push-pull voltage ± 2 kV common-mode voltage	The quality of the supply voltage should correspond to that of a typical business or hospital environment.
Voltage dips, short interruptions and fluctuations of the supply acc. to IEC 61000-4-11	0 % U_T*; 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315° 0% U_T; 1 cycle and 70% U_T; 25/30 cycles Single phase: at 0° 0% U_T; 250/300 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of the device requests continued functioning even when interruptions of the power supply occur, it is recommended that the device be supplied from a power supply that is free of interruptions.
*Note: U_T is the mains alternating voltage before applying the test levels.		

3. For the use of ME devices in professional healthcare facilities. Test specification for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment (according to IEC 60601-1-2:2014)

The device is intended for use in the electromagnetic environment specified below.
The user of the device should make sure that it is used in such an environment.

Test frequency MHz	Band MHz	Service	Modulation	Maximum power W	Distance m	IMMUNITY TEST LEVEL V/m
385	380 to 390	TETRA 400	Pulse modulation 18 Hz	1.8	1.0	27
450	430 to 470	GMRS 460, FRS 460	FM ± 5 kHz stroke ± 1 kHz sine wave	2	1.0	28
710	704 to 787	Band 13, 17	Pulse modulation 217 Hz	0.2	1.0	9
745						
780						
810	800 to 960	GSM 800/900 TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	2	1.0	28
870						
930						
1720	1700 to 1990	GSM 1800, CDMA 1900, GSM 1900, DECT, LTE Band 1,3, 4, 25 UMTS	Pulse modulation 217 Hz	2	1.0	28
1845						
1970						
2450	2400 to 2570	Bluetooth, WLAN 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	2	1.0	28
5240	5100 to 5800	WLAN 802.11 a/n	Pulse modulation 217 Hz	0.2	1.0	9
5500						
5785						

*Note: If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the device may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

4. Guidance and manufacturer's declaration – electromagnetic immunity – for equipment and systems that are not life-supporting

The device is intended for use in the electromagnetic environment specified below.
The user of the device should make sure that it is used in such an environment.

Interference immunity tests	IEC 60601-1-2:2014 test level	Conformity level	Electromagnetic environment – guidelines
Conducted RF disturbances acc. to IEC 61000-4-6 Radiated RF disturbances according to IEC 61 000·4·3	3 V rms 150 kHz to < 80 MHz 3 V/m 80 MHz to 2.5 GHz	3 V eff 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = 1.2 \sqrt{P}$ Where P is the nominal power of the transmitter in watts [W] according to the information provided by the manufacturer of the transmitter and d is the recommended separation distance in meters [m]. The field strength of stationary transmitters at all frequencies on site a should be, according to **a** study, less than the conformity level **b**. $d = 1.2 \sqrt{P}$ 80 MHz to < 800 MHz $d = 2.3 \sqrt{P}$ 800 MHz to 2.5 GHz Interference may occur in the vicinity of equipment marked with the following symbol: 

Note: These guidelines may not apply in all situations. The propagation of electromagnetic quantities is affected by absorptions and reflections of buildings, objects, and persons.

a Field strengths from fixed transmitters, such as base stations for radio [cellular/cordless] telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment of the stationary transmitters, a site survey should be considered. If the measured field strength in the location at which the device is used exceeds the above conformity levels, the device should be observed to verify normal operation. If unusual performance characteristics are observed, additional measures may be necessary, such as a modified orientation or a different location for the device.
b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

5. Recommended separation distances between portable and mobile RF communications equipment and the device

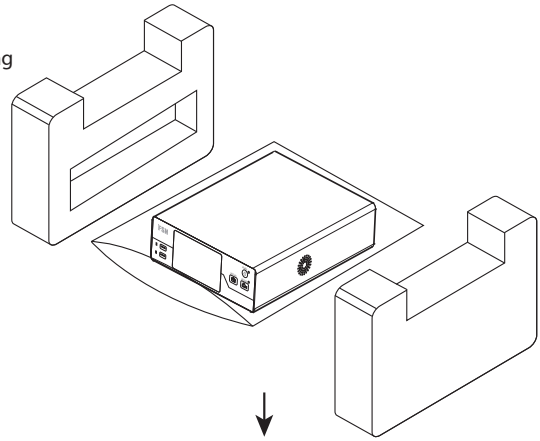
The device is intended for use in the electromagnetic environment in which the RF disturbances are controlled. The user of the device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the device – as a function of the output power of the communication device, as shown below.

Nominal power of transmitter [W]	Separation distanced [m] according to frequency of transmitter		
	150kHz to< 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to< 800 MHz $d = 1.2 \sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3 \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

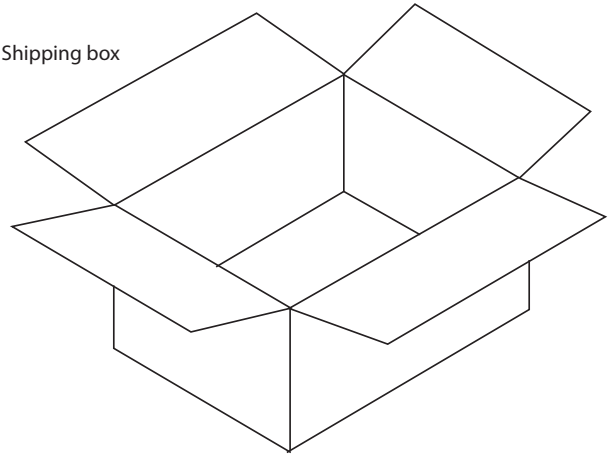
For transmitters rated at a maximum output power not listed above, the recommended separation distance **d** in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where **P** is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Accessories IPS720, IPS740DS, IPS740DG

Packaging cushion



Shipping box



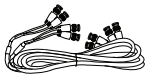
AC power cord (6ft, 1.8 m medical grade)

User's guide

HDMI cable (2 m)

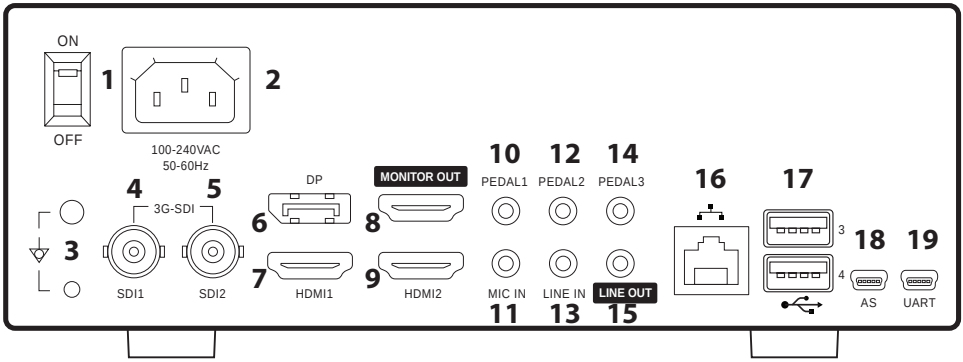
DisplayPort cable (6ft, 1.8 m)

IPS720
IPS740DS
SDI cable (6ft, 1.8 m)



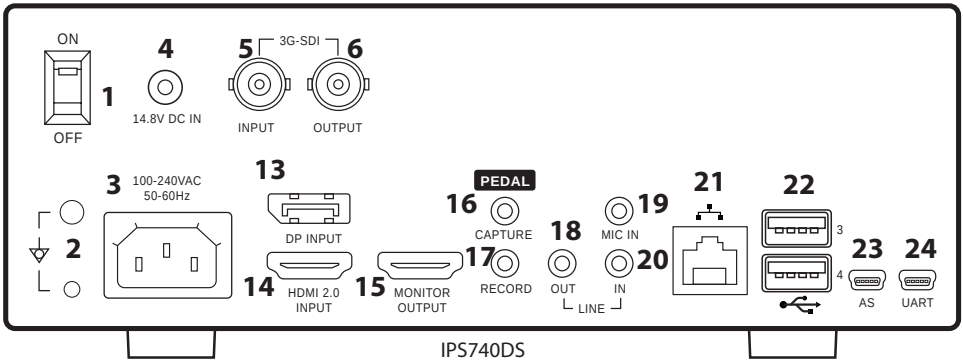
IPS740DG
4 SDI cables (6ft, 1.8 m)

Back Panel IPS720

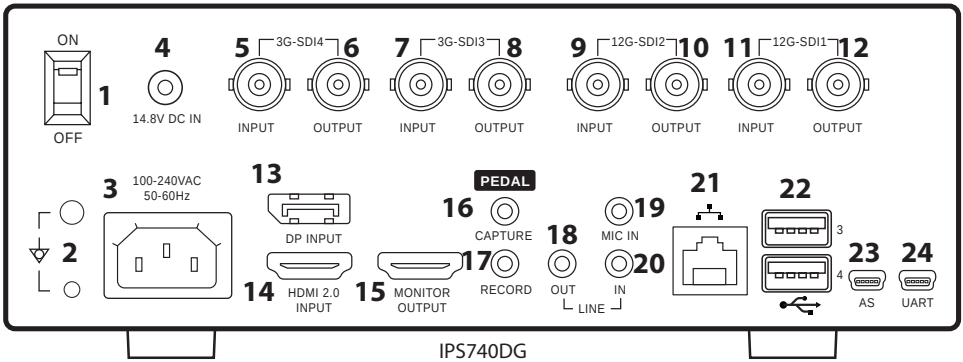


1	AC ON/OFF Switch	**11**	MIC Input (3.5ø phone)
2	AC Inlet	**12**	PEDAL Input 2 (3.5ø phone)
3	Earth Terminal	**13**	LINE(AUDIO) Input (3.5ø phone)
4	3G-SDI1 Input (BNC-75Ω)	**14**	PEDAL Input 3 (3.5ø phone)
5	3G-SDI2 Input (BNC-75Ω)	**15**	LINE(AUDIO) Output (3.5ø phone)
6	DisplayPort 1.4 Input	**16**	Network Port (RJ45)
7	HDMI1 Input (up to 1920x1080p@60)	**17**	USB (USB 3.0, 2 on front, 2 on rear)
8	HDMI Output (1920x1080p@60)	**18**	Service Port (mini USB)
9	HDMI2 Input (up to 1920x1080p@60)	**19**	RS-232 (mini USB)
10	PEDAL Input 1 (3.5ø phone)		

Back Panel IPS740DS, IPS740DG



IPS740DS

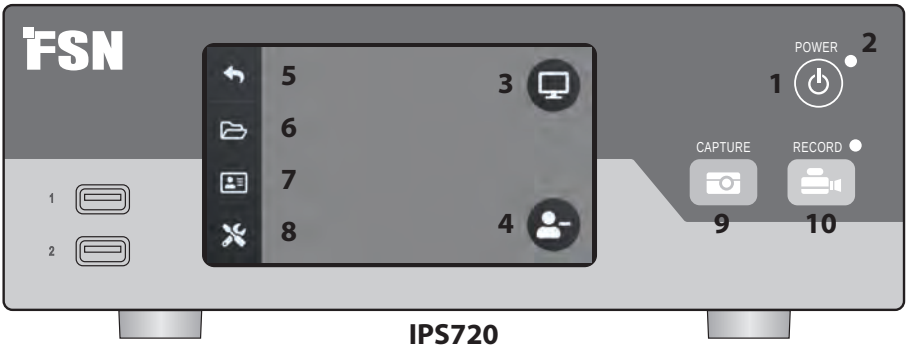


IPS740DG

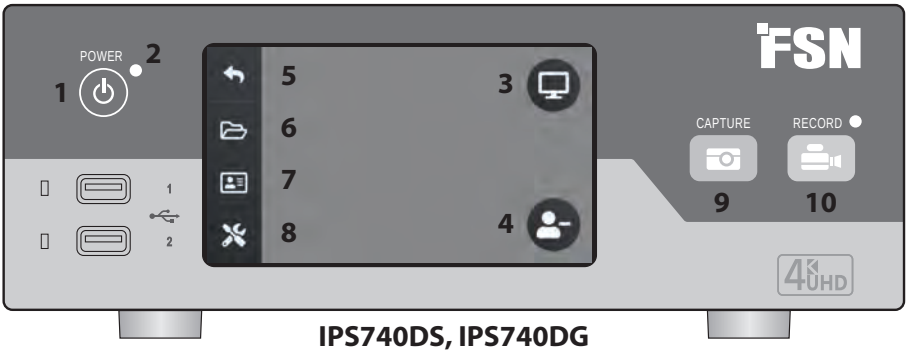
1	AC ON/OFF Switch (ON: Green LED)	**13**	DISPLAYPORT1.4 Input
2	Earth Terminal	**14**	HDMI Input (up to 4096x2160p@60)
3	AC Inlet	**15**	HDMI Output (1920x1080p@60/3840x2160p@60)
4	DC Inlet (For use as an auxiliary power supply to prevent file errors during recording when a power failure occurs.)	**16**	PEDAL Input (Capture, 3.5mm)
5	3G-SDI4 Input (BNC-75Ω)	**17**	PEDAL Input (Record, 3.5mm)
6	3G-SDI4 loop throughout (BNC-75Ω)	**18**	LINE(AUDIO) Output (3.5mm)
7*	3G-SDI3 Input (BNC-75Ω)	**19**	MIC Input (3.5ø phone)
8*	3G-SDI3 loop throughout (BNC-75Ω)	**20**	LINE(AUDIO) Input (3.5ø phone)
9*	12G-SDI2 Input (BNC-75Ω)	**21**	Network Port (RJ45)
10*	12G-SDI2 loop throughout (BNC-75Ω)	**22**	USB (USB 3.0)
11*	12G-SDI1 Input (BNC-75Ω)	**23**	Service Port (mini USB)
12*	12G-SDI1 loop throughout (BNC-75Ω)	**24**	RS-232 (mini USB)

*SDI connections available on IPS740DG

Front Panel



IPS720



IPS740DS, IPS740DG

1 POWER on/off button. With the back panel power switch in the ON position, press to start the initialization process.

2 LED indicator when the back panel power switch in the ON position: Green = standby
Off = Unit is working normally.

3 Select the **MONITOR** icon to switch to the connected external monitor. When in this mode, touchscreen can also be used as a touchpad.

4 Create a new **TASK** when plus (+) symbol is shown, or close an active task when minus (-) symbol is shown.

5 Return to **HOME** screen icon.

6 FILE icon manages tasks, including: search, modify, copy, delete, DICOM store, and print.

7 WORKLIST icon retrieves patient information that is stored on the worklist server.

8 SETUP icon opens settings for input sources, file types, DICOM, server, network, local time, foot pedal, printing layout, and system options.

9 CAPTURE button. Capture can also be initiated by using an attached monitor (touchscreen or mouse), or with VACS software.

10 RECORD button. Video recording can also be initiated by using an attached monitor (touchscreen or mouse), or with VACS software.

User Interface - Front Panel Only

Video source.

Connect to back of recorder.

Active signal is previewed on the front panel LCD. Tap the LCD to show icons for: Home, File, Worklist, Setup, Monitor (if connected), and Task, (create new or close active).

User Interface - Front Panel and External Monitor

Active signal and icons are previewed on the connected external monitor.

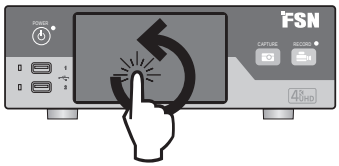
Control Option 1

Use the front panel LCD as a touchpad to move the cursor and select items on the external monitor.

Connect to back of recorder.

Video source.

Connect to back of recorder.

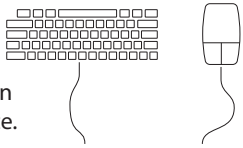


Control Option 2

Use a touchscreen connected via USB as the external monitor to move the cursor and select items on the interface.

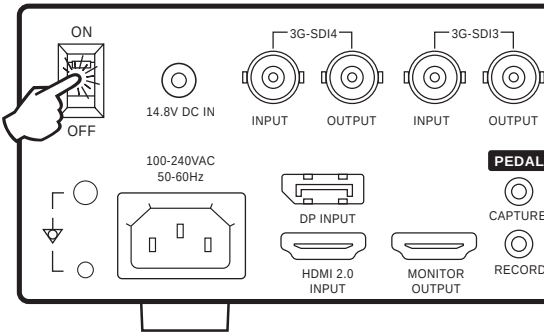
Control Option 3

Use a mouse and keyboard connected via USB to move the cursor and select items on the external monitor interface.



Turn Power On

Move the AC On/Off switch on the back panel to the ON position.



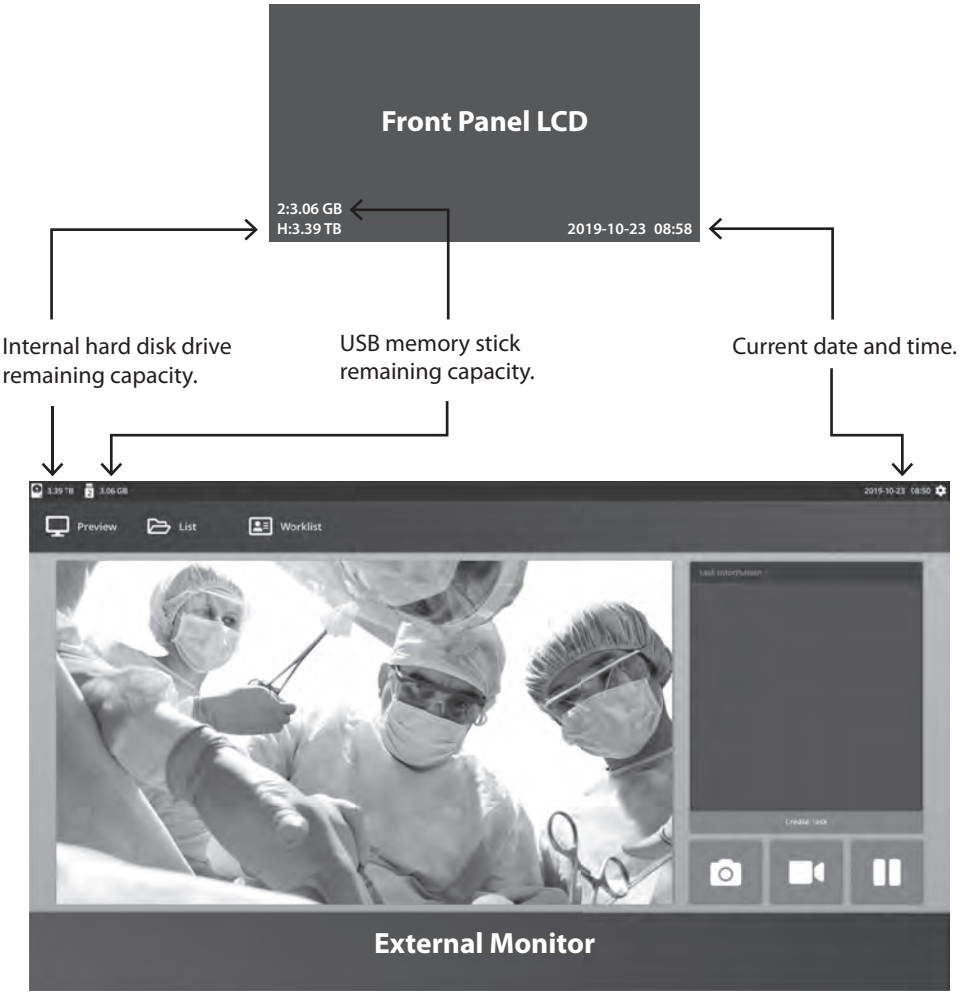
Press the power button on the front panel to start the initialization process.

Turn Power Off

Press the power button on the front panel and follow the directions on the user interface.

Powering off with this method will shut down the unit, however the back AC On/Off switch will remain in the ON position.

Date, Time, Data Storage Capacity



Tasks

A task is a collection of captured or recorded images that have been created during the same session or procedure. Patient information is associated with content in a task. After a task has been closed, additional content can no longer be added to the task. Still images are able to be captured from a task's video playback. Task information can be modified after a task has been closed. A task number is automatically given by the system to each new task.

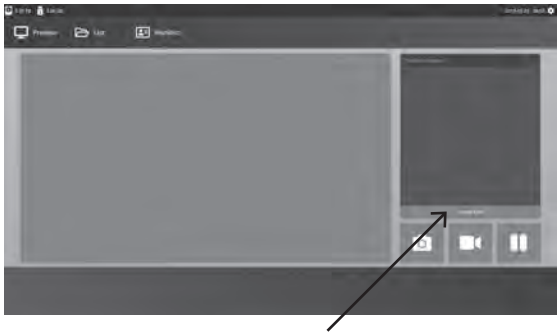
Create New Task → **Add Patient Information** → **Capture or Record Images to the Task** → **Close Task**

Create New Task

Front Panel LCD

Select to create new task.
Note: the **+** sign in the icon means that a task is not currently active.

External Monitor



Select to create new task.

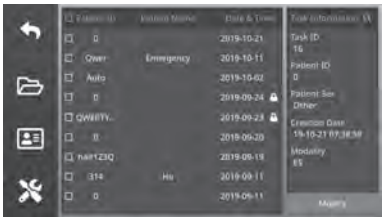
The Create Task dialog asks for the following information: Patient ID, Patient Name, Patient Sex, Patient Birth Date, Task Description. This information can be entered manually using the interface keyboard or an attached USB keyboard.

The information can also be imported from a facility's worklist as described later in this guide.

Open Existing Task

Select the **FILE** icon to manage tasks, including: search, modify, copy, delete, DICOM store, and print. After a task has been closed, additional content can no longer be added to the task. Still images are able to be captured from a task's video playback.

Front Panel LCD



External Monitor

Close Task

Front Panel LCD

Select to close a task.
Note: the **–** sign in the icon means that a task is currently active.

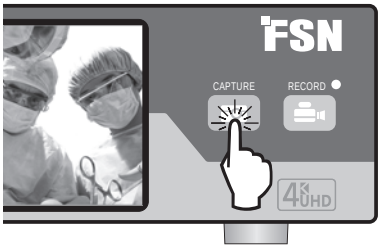
External Monitor

Select to close a task.

Capturing Still Images

Connect an input source signal. Make sure a task has been created and the input source signal is being shown in the preview window of the front panel LCD or the external monitor.

Front Panel LCD



External Monitor

Select the camera icon, or tap on the external monitor preview screen to capture an image. A beep sound signals that the capture was performed. A preview of the capture is displayed for 1.5 seconds.

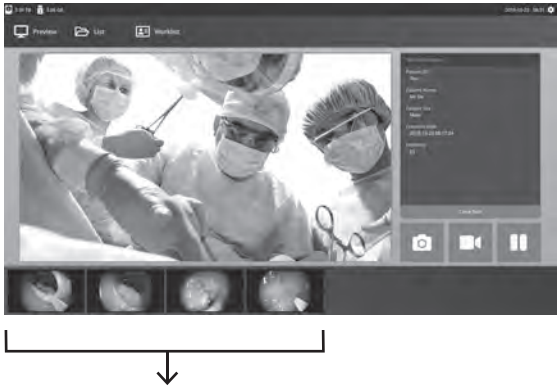
If a foot pedal is connected to the pedal capture input on the back of the recorder, pressing the pedal will capture a still image. Captured still images are stored within the task for future use.

Thumbnail Views

Each time a still image or a video is created, a thumbnail snapshot is generated within the task that is open. Double clicking on any thumbnail will open the file details viewer.

The file details viewer is shown later in this guide.

External Monitor



Thumbnail snapshots of captured still images and recorded video.

Recording Video

Connect an input source signal. Make sure a task has been created and the input source signal is being shown in the preview window of the front panel LCD or the external monitor.

Front Panel LCD

External Monitor

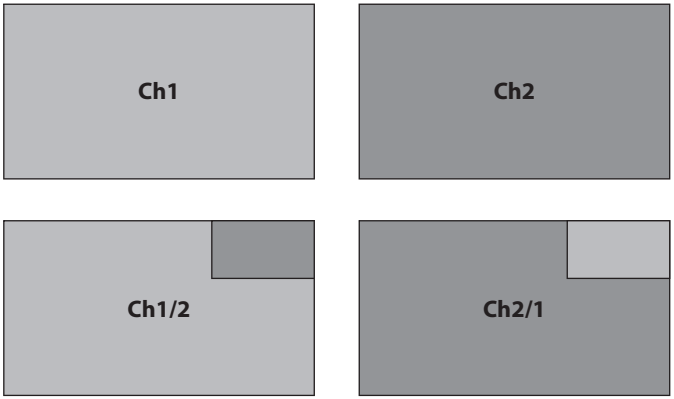
Select the video recorder icon to record video. A beep sound and red dot symbol signals that the recording process is underway. Select the video recorder icon again to stop recording.

If a foot pedal is connected to the pedal record input on the back of the recorder, pressing the pedal will start and stop the video recording process. Recorded video files are stored within the task for future use.

Dual Recording (IPS720)

The Dual Record feature in IPS720 can be setup to simultaneously preview and record two input source signals to two seperate video files, or to a single video file with two channels.

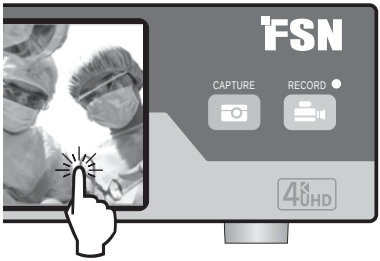
When playing back a single video file that contains two channels, choose from four screen layout options that appear with the other video playback controls.



File Playback While a Task is Still Open

With a task still open, double-click preview area to review and display current images and videos. This will open the file details viewer.

Front Panel LCD



2x

External Monitor

2x

File Playback After a Task has Been Closed

Double-click a task and all the files contained in the task are displayed in the left window.

Double-click on any thumbnail to open the file details viewer.

Front Panel LCD

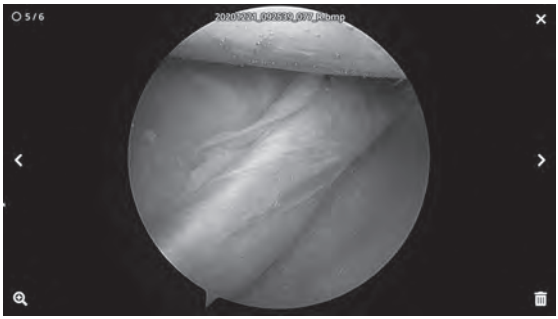
2x

External Monitor

2x

File Details Viewer

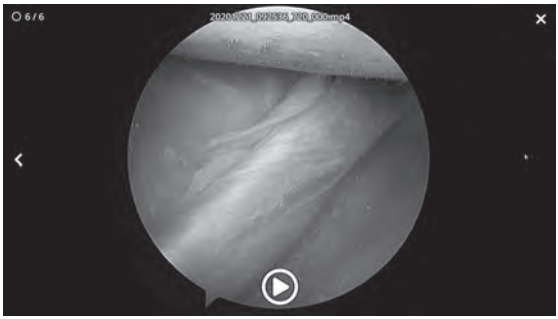
View previous file.



View next file.

Zoom in/out.

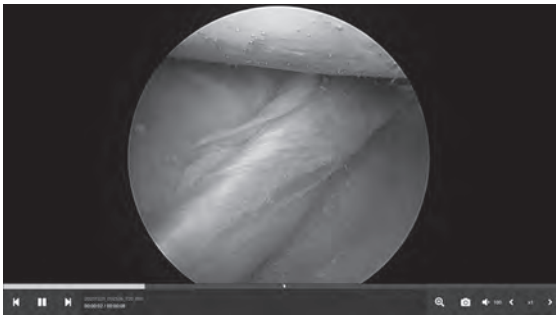
Delete file.



Exit file details viewer.

Play video.
Double-click a playing video to return to the file details viewer.

Video progress.



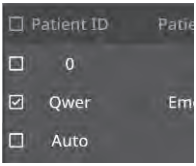
Previous video in the task.
Pause.
Next video in the task.

Zoom in/out.
Image capture from video.
Audio volume.
Playback speed.

Task Actions

Select the **FILE** icon to manage tasks, including: search, modify, copy, delete, DICOM store, and print.

From the list of stored tasks, select a task by clicking the box to the left of the Patient ID column. This opens several actions that can be applied to the task, including: Copy to USB, Delete, DICOM Store, Print, and Modify. Use the upper right magnifying glass icon to search tasks for specific content.



External Monitor

Front Panel LCD

Task Actions

- Copy to USB - Copies the selected task to a USB memory stick. All USB memory sticks plugged in the system will be shown as options.
- Delete - Deletes the selected task.
- DICOM Store - Sends the selected task to the PACS server.
- Print - Prints the selected task. The printing layout, 1x1 Landscape for example, is shown on the title bar of the dialog window.
- Modify - Allows changes to a task's patient information.

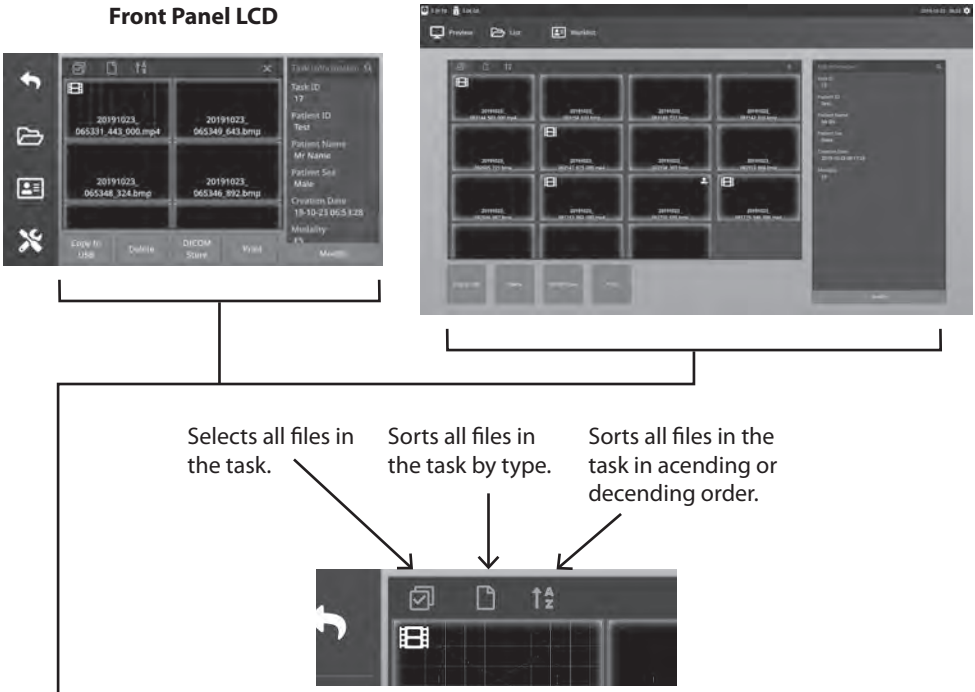
The magnifying glass icon in the top-right corner will search tasks for specific content. By leaving all criteria blank, all the tasks are listed in search results.

File Actions

Double-click a task and all the files contained in the task are displayed in the left window.

External Monitor

Front Panel LCD



Selects all files in the task.

Sorts all files in the task by type.

Sorts all files in the task in acending or decending order.

File Actions (after selecting files to be manipulated)

- Copy to USB - Copies the selected files to a USB memory stick. All USB memory sticks plugged in the system will be shown as options.
- Delete - Deletes the selected files.
- DICOM Store - Sends the selected files to the PACS server.
- Print - Prints the selected files. The printing layout, 1x1 Landscape for example, is shown on the title bar of the dialog window.
- Modify - Allows changes to a file's patient information.

The magnifying glass icon in the top-right corner will search for specific content.

Creating Tasks Using Worklist Information

Before retrieving worklist information, worklist server settings should be properly configured in the Setup -> System menu.

Select the **WORKLIST** icon. Patient information that is stored on the worklist server will be presented in the left window. Click a worklist item and detailed information associated with the item is presented in the right window.

External Monitor

Front Panel LCD

- Left Column: Patients on the worklist.
- Right Column: After a selection, patient information details.
- Create Task - Click to convert a worklist item into a recorder task.
- Start MPPS (Modality Performed Procedure Step)

Setup IPS720

Select the **SETUP** icon, wrench image on LCD or gear image on external monitor, to manage system settings as outlined below. If password protection has been enabled, the password authentication dialog will be opened.

Front Panel LCD

External Monitor

Setup Menu	Sub Menu Item	Setup Descriptions
Input	Video	Source 1, Source 2, 3D Mode, Video Range (Source 1, 2), Live View
	Audio	Source
File	Record	Format, Quality, Dual Record, Clip Size, Auto Copy,
	Capture	Format, Auto Copy
	Common	Aspect Ratio, Free up HDD Space, Low HDD Warning
DICOM	Worklist	Server AE Title, Server IP, Server Port, Client AE Title, Echo
	Store	Server AE Title, Server IP, Server Port, Client AE Title, Echo
	MPPS	Server AE Title, Server IP, Server Port, Client AE Title, Echo
	Common	Modality, Hospital Institution, Scheduled Station AE Title, Character Set
	Secure Communication	TLS Mode
CIFS	Server	ID, Password
	Client 1 - 4	Address, ID, Password
Network	–	DHCP, IP, Netmask, Gateway, DNS, MAC
Time	–	Time Server, GMT, DST
OSD	–	(Off/On) Top-Left, Top-Right, Bottom-Left, Bottom-Right, Language, Capture Image Position, Printer Button
Misc.	Foot Pedal	Pedal 1, Pedal 2, Pedal 3, Pedal Type, Record Action
	Print	Layout
System	Version	Main, Sub
	Update	Main, Sub
	Initialization	HDD, USB, System
	Misc.	Setup Password, Operator Password

Setup IPS740DS, IPS740DG

Select the **SETUP** icon, wrench image on LCD or gear image on external monitor, to manage system settings as outlined below. If password protection has been enabled, the password authentication dialog will be opened.

Front Panel LCD

External Monitor

Setup Menu	Sub Menu Item	Setup Descriptions
Input	Video	Source, 3D Mode
	Audio	Source
File	Record	Format, Quality, Clip Size, USB Auto Copy
	Capture	Format, USB Auto Copy
DICOM	Common	Resolution, Aspect Ratio
	Worklist	Server AE Title, Server IP, Server Port, Client AE Title, Echo
	Store	Server AE Title, Server IP, Server Port
	MPPS	Server AE Title, Server IP, Client AE Title, Echo
	Common	Modality, Hospital Institution, Scheduled Station AE Title, Character Set
CIFS	Samba	ID, Password
Network	–	DHCP, IP, Netmask, Gateway, DNS
Time	–	Time Server, GMT
OSD	–	(Off/On) Top-Left, Top-Right, Bottom-Left, Bottom-Right Language, Capture Image Position, Printer Button
Misc.	–	Foot Pedal, Print Layout
System	Version	Main, Sub
	Update	Main, Sub
	Initialization	HDD, System
	Misc.	Output Resolution, Setup Password, Operator Password

Input/Output Timing

HDMI input

IPS720	IPS740DS	IPS740DG	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)
•	•	•	640 x 480	31.47	59.94	25.173
•	•	•	800 x 600	37.88	60.32	40.00
•	•	•	1024 x 768	48.36	60.00	65.00
•	•	•	1280 x 720	44.76	60.00	74.486
•	•	•	1280 x 1024	63.98	60.02	108.50
•	•	•	1920 x 1200	74.04	59.95	154.00
•	•	•	720p	45.00	60.00	74.25
•	•	•	1080i	33.75	60.00	74.25
•	•	•	1080p	67.50	60.00	148.50
	•	•	3840 x 2160p	135.00	60.00	594.00
	•	•	4096 x 2160p	135.00	60.00	594.00

DisplayPort input

IPS720	IPS740DS	IPS740DG	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)
•	•	•	1080p	67.50	60.00	148.50
	•	•	3840 x 2160p	135.00	60.00	594.00
	•	•	4096 x 2160p	135.00	60.00	594.00

SDI input

IPS720	IPS740DS	IPS740DG	Signal input	Description
		•	SMPTE ST-2082	2160p
•	•	•	SMPTE-424M	1080p
•	•	•	SMPTE-292M	1080i / 720p
•	•	•	SMPTE-259M	480i / 576i

HDMI output

IPS720	IPS740DS	IPS740DG	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)
•	•	•	1920 X 1080@60Hz	67.5	60.0	148.5
	•	•	3840 X 2160@60Hz	135.0	60.0	594.0

SDI loop through output

IPS720	IPS740DS	IPS740DG	Signal input	Description
		•	SMPTE ST-2082	2160p
	•	•	SMPTE-424M	1080p
	•	•	SMPTE-292M	1080i / 720p
	•	•	SMPTE-259M	480i / 576i

General Specification IPS720

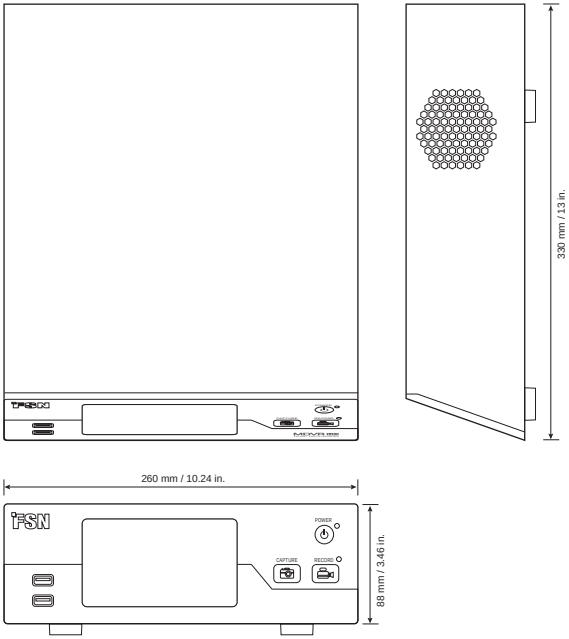
Item	Description	
Main Functions	Video recording	Up to 1080p 60Hz
	Still image capture	Up to 1920 x 1080p
	Standalone preview	Front LCD screen
	Menu access	Front LCD touchscreen, or GUI on HDMI monitor output
	DICOM, HL7	DICOM store (image), Modality worklist, MPPS, Appointment booking (HL7)
	DICOM store	Direct access to PACS
Inputs	HDMI	HDMI 2.0
	DisplayPort	DP 1.4
	SDI	3G-SDI
	Audio	3.5mm stereo x 2ea , Mic in, Line in
Outputs	Monitor output	HDMI 2.0
	Audio	3.5mm Stereo, Line out
Data I/O	USB3.0	Front: 2, Rear: 2
	RS-232C	Mini-USB
	Ethernet	RJ45 (10/100/1000M)
	Keyboard / Mouse	USB type
	Foot pedal	3.5mm stereo jack x 3ea, Pedal 1, Pedal 2, Pedal 3
Recording & Capture	Recording resolution	1920x1080p60
	Encoding formats	H.264, H.265
	Recording file format	MP4
	Capture image format	BMP, JPEG, BMP+DCM
	Audio encoding format	AAC
	3D video formats	Side-by-Side Top-Bottom Line-by-Line (SbS Conversion, TB Conversion)
Storage	Internal hard drive	2TB
	External USB storage	USB flash drive, USB HDD
	USB file system	FAT32, NTFS
	Network file system	CIFS
	Network transfer	FTP (client)
General	Power requirements	AC 100-240V ~, 50-60Hz, 1.0A-0.6A MAX
	Power consumption	60W MAX
	Dimensions	260mm (10.2 in.) wide x 95mm (3.7 in.) high x 330mm (13 in.) deep
	Weight	4.0kg / 8.8lbs.
	Temperature	Operating: 0° to +40° C (+32° to +104° F) Storage: -20° to + 60° C (-4° to +140° F)
	Humidity	Operating: 10 - 85% RH, Storage: 10 - 85% RH
Compliance and Certifications	CE-MDR 2017/745 Class 1 Medical Device, UL 60601-1, IEC60601-1, EN 60601-1-2, FCC Part 15B, CCC, ISO9001, ISO13485, RoHS	

General Specification IPS740DS, IPS740DG

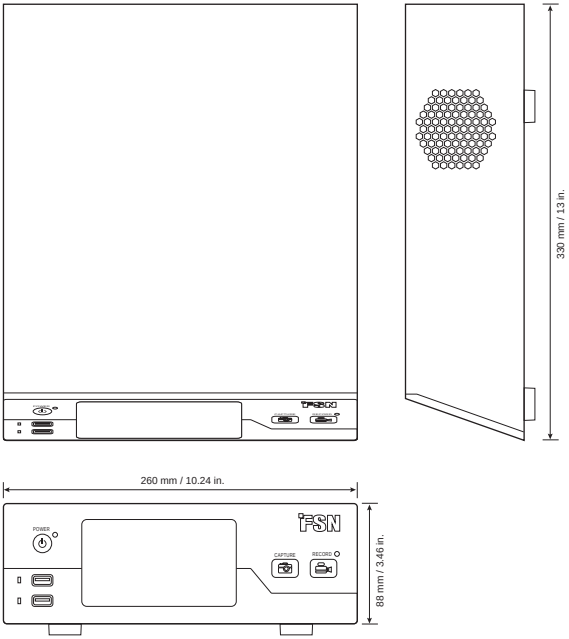
Item	Description	
Main Functions	Video recording	Up to 3840 x 2160p 60Hz
	Still image capture	Up to 3840 x 2160
	Standalone preview	Front LCD screen
	Menu access	Front LCD touchscreen, or GUI on HDMI monitor output
	DICOM, HL7	DICOM store (image), Modality worklist, MPPS, Appointment booking (HL7)
	DICOM store	Direct access to PACS
Inputs	HDMI	HDMI 2.0
	DisplayPort	DP 1.4
	SDI	IPS740DS: 3G-SDI, IPS740DG: 12G-SDI, 2SI, Quad
	Audio	3.5mm stereo x 2ea , Mic in, Line in
Outputs	Monitor output	HDMI 2.0
	Loop-through	IPS740DS: 3G-SDI, IPS740DG: 12G-SDI, 2SI, Quad
	Audio	3.5mm Stereo line out
Data I/O	USB3.0	Front: 2, Rear: 2
	RS-232C	Mini-USB
	Ethernet	RJ45 (10/100/1000M)
	Keyboard / Mouse	USB type
	Foot pedal	3.5mm stereo jack x 2ea, Record, Capture
Recording & Capture	Recording resolution	1920x1080p60, 3840x2160p60
	Encoding formats	H.264, H.265
	Recording file format	MP4
	Capture image format	BMP, JPEG, DICOM
	Audio encoding format	AAC
	3D video formats	4K line alternative (SBSH conversion) 4K side-by-side half
Storage	Internal hard drive	4TB
	External USB storage	USB flash drive, USB HDD
	USB file system	FAT32, NTFS
	Network file system	CIFS
	Network transfer	FTP (client)
General	Power requirements	AC 100-240V ~, 50-60Hz, 1.0A-0.6A MAX
	Power consumption	60W MAX
	Dimensions	260mm (10.2 in.) wide x 95mm (3.7 in.) high x 330mm (13 in.) deep
	Weight	IPS740DS 4.0kg / 8.8lbs., IPS740DG 4.1kg / 9.0lbs.
	Temperature	Operating: 0° to +40° C (+32° to +104° F) Storage: -20° to + 60° C (-4° to +140° F)
	Humidity	Operating: 10 - 85% RH, Storage: 10 - 85% RH
Compliance and Certifications	CE-MDR 2017/745 Class 1 Medical Device, UL 60601-1, IEC60601-1, EN 60601-1-2, FCC Part 15B, CCC, ISO9001, ISO13485, RoHS	

Dimensions

IPS720



IPS740DS
IPS740DG



Cleaning Instructions

 Follow your hospital protocol for the handling of blood and body fluids. Clean the device with a diluted mixture of mild detergent and water. Use a soft cotton towel or swab. Use of certain detergents may cause degradation to the labels and plastic components of the product. Consult cleanser manufacturer to see if agent is compatible. Do not allow liquid to enter the device.

1. Clean the cabinet using a soft cotton cloth, lightly moistened with a recognized cleaning product for medical equipment.
2. Repeat with water only.
3. Wipe dry with a dry cloth.

The cabinet has been tested for resistance to the following products:
• Virex Ready-to-use Disinfectant Cleaner • Misty Clear Lemon 10 Disinfectant • Misty Multi-Purpose Disinfectant Cleaner • Misty Multi-Purpose Disinfectant Cleaner II • Zep Heavy-duty glass & all surface cleaner • Klear Screen • Screen TFT (Kontakt Chemie) • Incidin Foam (Ecolab) • Microzid • Mild detergent • Isopropyl alchohol with concentration < 5% • Household bleach (generic sodium hypochlorite, solutions of 5.25% sodium hypochlorite diluted with water between 1:10 and 1:100) • Precise Hospital Foam Cleaner Disinfectant

Thank you for choosing our product.

Service
Contact the appropriate customer service listed below for product information or assistance.

Warranty
One year, parts and labor.

EC REP EC Representative
KTR Europe GmbH
Mergenthalerallee 77, Eschborn 65760, Germany
Tel : +49(0)6196-887170

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Specifications are subject to change with or without notice.

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