



## InSight<sup>®</sup> FD Mini C-arm Imaging System User Guide

MAN-05288-001 Revision 007





# InSight® FD

Mini C-arm Imaging System

## User Guide

Part Number: MAN-05288-001

Revision 007

July 2021

**HOLOGIC®**

Caution: Federal (U.S.A.) law restricts this device to sale by or on the order of a physician (or properly licensed practitioner).

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# 1 Indications for Use

The InSight® FD System is a Mini C-arm Fluoroscopic Imaging System designed to provide physicians with general fluoroscopic visualization of a patient, including, but not limited to surgical orthopedic and podiatry use, critical and emergency care procedures, and light anatomy imaging situations.

Intended Use:

**Rx Only** *Caution: United States federal law restricts this device to sale by or on the order of a physician.*

**Figure 1 InSight FD Mini C-arm**



## 1.1 Essential Performance

The Insight FD System is a mobile fluoroscopic mini C-arm system that provides fluoroscopic images safely and effectively during diagnostic, treatment, and surgical procedures of patient's extremities.

## 1.2 Warranty Statement

Except as otherwise expressly stated in the Agreement: i) Equipment manufactured by Hologic<sup>®</sup> is warranted to the original Customer to perform substantially in accordance with published product specifications for one (1) year starting from the date of shipment, or if Installation is required, from the date of Installation ("Warranty Period"); ii) digital imaging X-ray tubes are warranted for twenty-four (24) months, during which the x-ray tubes are fully warranted for the first twelve (12) months and are warranted on a straight-line prorated basis during months 13-24; iii) replacement parts and remanufactured items are warranted for the remainder of the Warranty Period or ninety (90) days from shipment, whichever is longer; iv) consumable Supplies are warranted to conform to published specifications for a period ending on the expiration date shown on their respective packages; v) licensed Software is warranted to operate in accordance with published specifications; vi) Services are warranted to be supplied in a workman-like manner; vii) non-Hologic Manufactured Equipment is warranted through its manufacturer and such manufacturer's warranties shall extend to Hologic's customers, to the extent permitted by the manufacturer of such non-Hologic Manufactured Equipment. Hologic does not warrant that use of Products will be uninterrupted or error-free, or that Products will operate with non-Hologic authorized third-party products.

These warranties do not apply to any item that is: (a) repaired, moved, or altered other than by Hologic authorized service personnel; (b) subjected to physical (including thermal or electrical) abuse, stress, or misuse; (c) stored, maintained, or operated in any manner inconsistent with applicable Hologic specifications or instructions, including Customer's refusal to allow Hologic recommended Software upgrades; or (d) designated as supplied subject to a non-Hologic warranty or on a pre-release or "as-is" basis.

## 1.3 User Profiles

It is anticipated that InSight Flat Detector users may include nurses both sterile and non-sterile, radiological or other technicians, doctors or surgeons with minimal training in fluoroscopic procedures.

### 1.3.1 Education

- Minimum of an associate degree or equivalent radiation technology certificate program
- No maximum

### 1.3.2 Knowledge

- Minimum  
Read and understand the InSight Flat Detector User's Manual  
Basic knowledge of computers
- No maximum

### 1.3.3 Experience

- Minimum  
No other special experience is needed
- No maximum

### 1.3.4 Permissible impairments

- Mild reading vision impairment or vision corrected to log MAR 0.2 (6/10 or 20/32)
- Average degree of aging-related short term memory
- Impaired by 40% resulting in 60% of normal hearing at 500 Hz to 2 kHz

## 2 Radiation Safety

Improper imaging procedures or the failure to observe radiation safety and technique factor recommendations could result in increased exposure. It is the operator's responsibility to observe all safety procedures and to keep radiation exposures As Low As Reasonably Achievable (ALARA) and to comply with all national, state and local regulatory requirements.

Hologic recommends that all members of the operating staff wear a radiation monitoring device. This is usually a film badge or TLD (thermoluminescent dosimetry) dosimeter which will record any radiation dose over a specific period of time. The physician should wear a ring badge to record any exposure to his/her hands.

### 2.1 General

A fluoroscopic device emits a continuous beam of X-rays in order to view an object in real-time.

Primary radiation is present in the space between the X-ray source and the detector screen. The operator should never place his/her own hands in the beam.

Secondary radiation or X-ray scatter is caused by X-rays that do not fully penetrate the object placed in the primary beam. X-ray scatter has considerably less energy than the primary beam and is absorbed by other objects in the immediate area. The amount of scatter depends upon the power setting used, the density and proximity of the body part to the beam, and the length of exposure time.



## 2.2 Radiation Dose and Dose Rate

Radiation received by each kilogram of a patient's body is called *dose*. *Dose rate* refers to the dose received per unit time.

Distance from the X-ray source reduces dose to both the patient and the operator.

For example, at maximum output the dose is 2.6 mGy/minute at the image receptor and 45 mGy/minute at the Tube Housing exit port, or 17 times greater than the dose at the image receptor. This higher value is known as the *maximum Entrance Exposure Rate* (EER).

Scattered radiation decreases with the square of the distance in exactly the same way as noted previously for X-rays in the primary beam. However, as the dose rate is much less, scatter is usually expressed in mR/hour (1 mR = 0.01 mGy).

Dose and scatter data for the InSight FD system is available from Hologic upon request.

## 2.3 X-ray Shielding

The scattered radiation from the InSight FD system is low compared to many other radiological devices, and the requirement to wear protective lead aprons and/or attenuating gloves is governed by applicable facility policy. Also many states, provinces, countries, and individual institutions may require persons in the same room with any operating fluoroscopic device to wear lead aprons. The strict observation of safe operating practices and the use of minimal fluoroscopic times is the key to reducing human exposure.

# 3 Regulations for X-ray Equipment

## 3.1 United States Federal and State Regulations

InSight FD Mini C-arm Imaging Systems conform to the United States Code of Federal Regulations, 21 CFR 1020.32 "Performance Standards for Ionizing Radiation Emitting Products: Fluoroscopic Equipment." However, additional state regulations may apply to X-ray products. This may require notifying your state regulatory agency about your installation and/or operator training and certification.

It is the responsibility of the user to contact the applicable state radiation control agency to verify that your installation is in compliance with regulations in your state governing installation and use of X-ray equipment.

The InSight FD Mini C-arm Imaging System complies with 21CFR Subchapter J.

The InSight FD Mini C-arm Imaging System is intended for special surgical applications that would be prohibited at the Source to Skin Distances (SSD) specified in 21CFR 1020.32 (g) but are permitted under 21CFR 1020.32 (g) (2). The SSD is 10 cm minimum.

## 3.2 Compliance

InSight FD Mini C-arm Imaging Systems comply with the requirements of IEC 60601-1. The InSight FD Mini C-arm Imaging Systems comply with the following IEC standards:

IEC 60601-1:2005 + A1:2012	IEC 60601-2-28:2010	IEC 60601-2-54:2009 + A1:2015
IEC 60601-1-2:2014	IEC 60601-1-3:2008 + A1:2013	CAN/CSA-C22.2 No. 60601- 1:08

The classification of the InSight FD Mini C-arm Imaging Systems under this specification is Class 1, Type B.

## 4 EMI

This instrument is designed to be compatible with the electromagnetic environments specified in IEC60601-1-2 and will operate satisfactorily when placed in an environment that includes other equipment complying with that standard. If equipment that is not electromagnetically compatible is placed into the environment where the InSight FD Mini C-arm System is used, the InSight FD Mini C-arm System or the non-compliant equipment may malfunction or exhibit other anomalous behavior. Consult the appropriate field service engineer.

## 5 Cybersecurity

Hologic continuously tests the current state of computer and network security to examine possible security problems. When necessary, Hologic provides the updates to the product.

Please refer to the following documents for Cybersecurity information:

- MAN-00734 InSight Cybersecurity Best Practices
- MAN-00664 Insight Cyber-Security Product Report

These documents are available on the Hologic, Inc. website at:

<http://www.hologic.com/support/fluoroscanner-mini-c-arm>

## 6 Accessories

This instrument is supplied with hardware and software accessories that are needed for safe and reliable operation. Additional accessories may be used to perform optional procedures. Do not use any accessories with this instrument other than those approved by Hologic.

## 7 Where to Obtain Copies of the Manuals

To obtain a PDF file of the User Guide or Service Manual, go to the support pages at [www.Hologic.com](http://www.Hologic.com).

Adobe Acrobat Reader version 5.0 or higher is required to view the PDF file.

To order printed manuals, contact Hologic Customer Support.

Toll Free in USA: +1.800.321.4659

Email: [SkeletalHealth.Support@hologic.com](mailto:SkeletalHealth.Support@hologic.com)

In Europe, South America, or Asia, contact your local dealer or distributor.

## 8 Terms and Definitions




**Table 1** Terms and Definitions

Term	Definition
AC	Alternating Current
AKR	Air Kerma, X-ray dose rate displayed in the units of mGy/min on InSight systems
ALARA	As Low As Reasonably Achievable Every reasonable effort to maintain exposures to ionizing radiation as low as practical
Annotations	Graphic or text marks on an image to show an area of interest.
C-ECHO	Confirms network connection to PACS.
CMOS	Complementary metal–oxide–semiconductor
DAP	Dose Area Product ( $\text{cGy} \cdot \text{cm}^2$ or $\text{mGy} \cdot \text{cm}^2$ )
DICOM	Digital Imaging and Communications in Medicine
EER	Entrance Exposure Rate
Last Image Hold	Whenever X-rays are being generated, the yellow X-ray light is ON, and the monitor displays the real time fluoroscopic image. When X-rays are terminated, the image displayed is the Last Image Hold (LIH) and the yellow X-ray light is OFF. This image is visible until the user replaces it with one from the filmstrip or activates another X-ray exposure
Noise	Light and dark areas (speckle) that are not part of the patient anatomy

Table 1 Terms and Definitions

Term	Definition
PACS	Picture Archiving and Communications System A computer and network system that transmits and archives digital medical images.
ROI	Region of Interest
SMPTE	Test pattern for evaluating the quality of video displays produced by the Society of Motion Picture & Television Engineers
SSD	Solid-state Drive A solid-state storage device that uses integrated circuit assemblies as memory to store data persistently.
TLD	Thermoluminescent Dosimetry, a method of measuring cumulative X-ray radiation exposure over time.

Table 2 Symbols

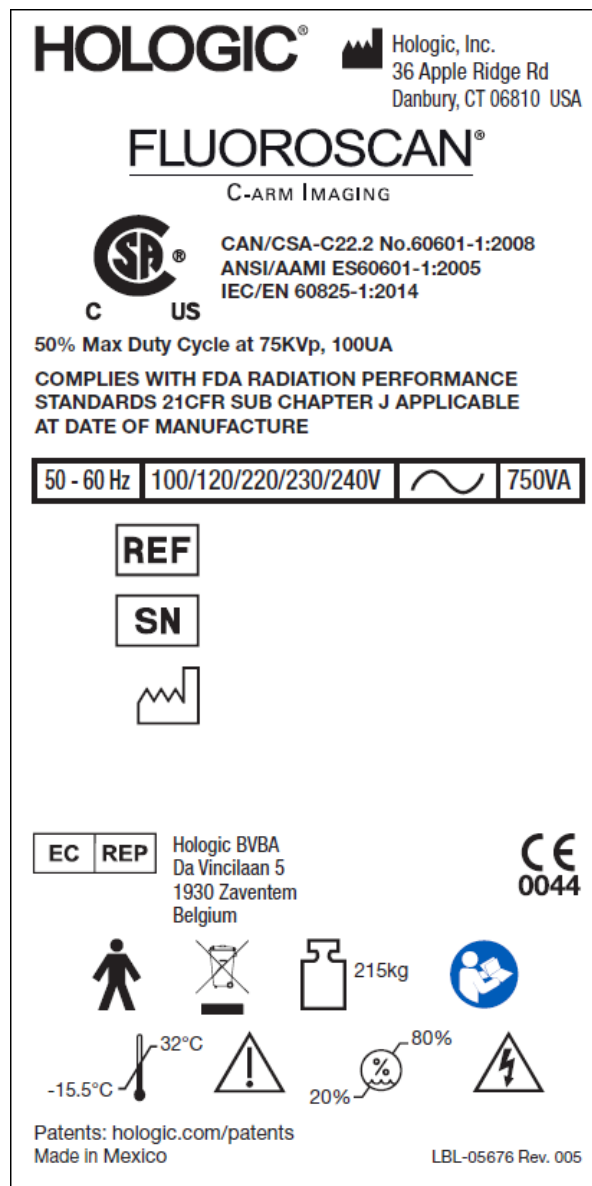
Symbol	Definition
	<b>Note</b> identifying recommended actions or additional information.
	<b>Caution</b> Procedures that you must follow to avoid compromising processes, prevent damage to equipment, loss of data, damage to files in software applications, or minor injury.
	<b>Warning</b> Procedures that you must follow to prevent death or serious injury.

## 9 InSight FD System Labels

### 9.1 System Main Label

The System Main Label is on the back of the base cabinet.\*

Figure 2 System Main Label

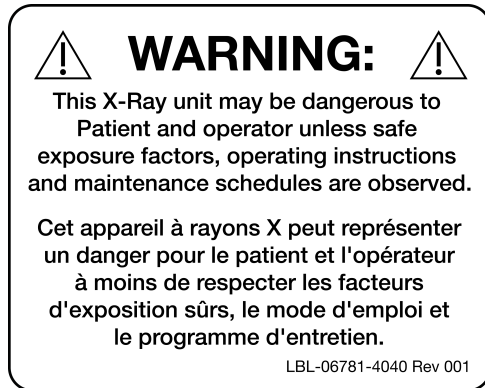


\* Additional labeling information is available in MAN-05309-001.

## 9.2 X-ray System Warning Label

The X-ray System Warning Label is on the left side of the base cabinet opposite the DVD player.

Figure 3 X-ray System Warning



## 9.3 Electric Shock Warning Label

The Electric Shock Warning Label is located near the fasteners for panels covering high voltage components.

Figure 4 Electric Shock Warning



## 9.4 No Pushing Warning Label

The No Push Warning Label is located on the back of the base cabinet.

**Figure 5 No Pushing Warning Label\***



\*Do not push the system with the casters locked or obstructed and the C-arm extended.

## 9.5 ISO 7010-M002 Label

**Figure 6 ISO 7010-M002 Label**



The ISO 7010-M002 Label, refer to instruction manual/booklet, is located on the main label.



### **Note**

*On ME Equipment\* "Follow instructions for use."*

*\*ME EQUIPMENT is equipment*

1. *provided with not more than one connection to a particular SUPPLY MAINS; and*
2. *intended by its MANUFACTURER to be used:*
  - a. *in the diagnosis, treatment or monitoring of a PATIENT; or*
  - b. *for compensation or alleviation of disease, injury or disability.*

*having an APPLIED PART or transferring energy to or from the PATIENT or detecting such energy transfer to or from the PATIENT..."*

**Note:** *The above definition aligns well with the definition for medical electrical devices in the European Medical Device Directive.*

## 9.6 Field of View

Field of View is represented by raised rectangles on the underside of the High Voltage Power Supply. When the Field of View selection lever is positioned at the large rectangle, full field of view is selected. When the Field of View selection lever is positioned at the small rectangle limited field of view is selected.



















Figure 7 Field of View










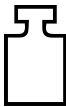


## Symbols

Table 3 Symbols

	CSA listed device		CE mark
	Warning: Electricity		Caution
	X-ray source assembly		Radiation Filter
	Type B applied part		Alternating current
	Earth (ground)		Protective earth (ground)
	Fuse		Equipotentiality
	USB connector		Electrostatic sensitive device
	Temperature limit		Humidity limitation

**Table 3 Symbols (Continued)**

	Computer On switch		Computer Standby switch		
	Date of Manufacture		Manufacturer		
	Equipment to be disposed in compliance with European Directive 2002/96/EC on Waste Electrical and Electronic Equipment.	<table border="1"><tr><td>EC</td><td>REP</td></tr></table>	EC	REP	Authorized representatives in the European Community
		EC	REP		
	Catalog number		Serial number		
	Follow instructions for use		No pushing		
	Combined weight of the equipment and its safe working load				

## 10 Safety Hazards

The following table itemizes various safety hazards. Each hazard is cross referenced with the respective cause and proper course of action.

**Table 4 Safety Hazards**




Safety Hazard	Cause	Course of Action
<b>Radiation Safety</b>	 <p><i>This system produces ionizing radiation and may be dangerous to patients and operators unless the safety and operating instructions in this manual are followed.</i></p>	<p>Although operating this system can result in low scatter radiation levels, it is recommended that protective X-ray clothing be worn and radiation safety precautions be observed when operating the system.</p> <p>Operators should avoid placing their hands or any part of their bodies in the path of the X-ray beam.</p> <p>When making X-ray exposures, place the anatomy close to the CMOS detector for the best image quality and to reduce exposure to radiation.</p> <p>An alarm sounds after every five minutes of accumulated exposure time.</p>
<b>Electrical Safety</b>	 <p><i>Electrical circuits inside the system can cause serious injury or death.</i></p> <p><i>This system operates on high voltages. High voltages are at the following locations:</i>  <i>X-ray tube: 75,000 Volts.</i></p>	<p>Safety covers have been designed for this system to mitigate the hazards caused by electrical circuits and high voltages. Never remove the covers or operate the system while the covers are off. If any cover is off, request service before using the system.</p> <p>  <i>Unplugging the power cord from the wall is the only way to disconnect main power from this system.</i> </p>

Table 4 Safety Hazards (Continued)




Safety Hazard	Cause	Course of Action
<b>Overbalance Hazard</b>	Placing too much weight on the C-arm CMOS detector may cause the system to overbalance. The amount of weight that the CMOS detector can support is highly variable, depending on the position of the flex-arm, C-arm, and other factors. This hazard is greatest when the flex-arm is extended and moved to the far left or right of the system.	<p>If weight is to be applied to the C-arm CMOS detector, caution must be used to prevent the device from becoming unstable.</p>  <p><i>Do not place the full weight of the lower extremity directly on the CMOS detector.</i></p> <p>Do not attempt to move the system from the left or right side or by pushing on the system C-arm or the mast when the casters are locked or obstructed.</p>
<b>Imaging Function Loss</b>	Detector damage from surgical tools (i.e., drills coming into contact with the detector surface)	 <p>Do not use the C-arm CMOS detector as a working surface.</p>
<b>Unauthorized Modifications to X-ray Tube</b>	 <p><i>Never remove the housing around the X-ray tube or make any changes to the X-ray tube.</i></p> <p>When the product leaves the manufacturing plant and at the time of installation, the X-ray source and assembly meet the requirements of 21 CFR 1020.30-32. Any unapproved change to the system could cause death, injury or expensive damage to the equipment, and could void the service agreement.</p>	Do not make any changes to the X-ray tube. Contact a Hologic Representative to replace the X-ray tube.

Table 4 Safety Hazards (Continued)

Safety Hazard	Cause	Course of Action
<b>Electrical Fire</b>	Fire from any source.	<p>If there is a fire in the area, and it is safe to do so, turn the system off and unplug the power cord from the wall outlet.</p> <p>Do not touch a system that is on fire. Leave the area. Only use fire extinguishers approved for electrical fires.</p>
<b>Explosion Hazard</b>	The system is not designed for use in explosive atmosphere (e.g., in the presence of a flammable anaesthetics mixture with air or oxygen or nitrous oxide).	<p>If an abnormal condition occurs, such as the room filling with flammable gas, take steps to prevent the gas from contacting the equipment. Follow these guidelines:</p> <ul style="list-style-type: none"> <li>• Do not turn the system ON or OFF, or unplug it from an AC power receptacle.</li> <li>• Do not operate any other electrically powered equipment.</li> <li>• Evacuate the area immediately. Ventilate the area with fresh air.</li> <li>• Avoid operating any automated (electrically operated) doors or windows.</li> <li>• Contact your local fire department.</li> </ul>
<b>Footswitch Safety</b>	The footswitch can be damaged by falling objects, being rolled over by the system wheels, and if it is dropped.	Remain aware of the footswitch at all times during operation and transport to avoid these hazards.

Table 4 Safety Hazards (Continued)






Safety Hazard	Cause	Course of Action
<b>Collision Hazard</b>	<p>If improperly moved or if the wheel brakes are not used correctly, the system could roll out of control.</p> <p>If the articulating flex arm is not locked in place during transport, the C-arm could swing out of control and cause injury to the patient or medical personnel.</p>	<p> <b><i>Use caution when moving the system on an incline.</i></b></p> <p>Do not move the system on an incline greater than ten degrees.</p> <p>One person can move the system easily on a level surface.</p> <p>Always lock the wheel brakes before procedures. Never leave the system unattended on an incline greater than five degrees.</p> <p>Always lock the flex arm after changing the position of the C-arm.</p>
<b>Cleaning Safety</b>	<p>Almost any liquid spilled into electronic equipment automatically becomes a conductor of electricity.</p>	<p>This system is not waterproof. If liquid is spilled on the system, turn the system off immediately. Do not turn the system on until the liquid has dried completely. Do not splash or spray cleaning solution on the system.</p> <p>Clean exterior surfaces of the InSight FD Console, the flex-arm, and the C-arm with a soft cloth or disposable lint-free tissue moistened with water, isopropanol or methanol. Wipe surfaces; do not scrub.</p> <p>For additional detail on disinfectants, see <a href="#">Section 17.3.1 Recommended Disinfectants</a> on Page 88.</p>

Table 4 Safety Hazards (Continued)

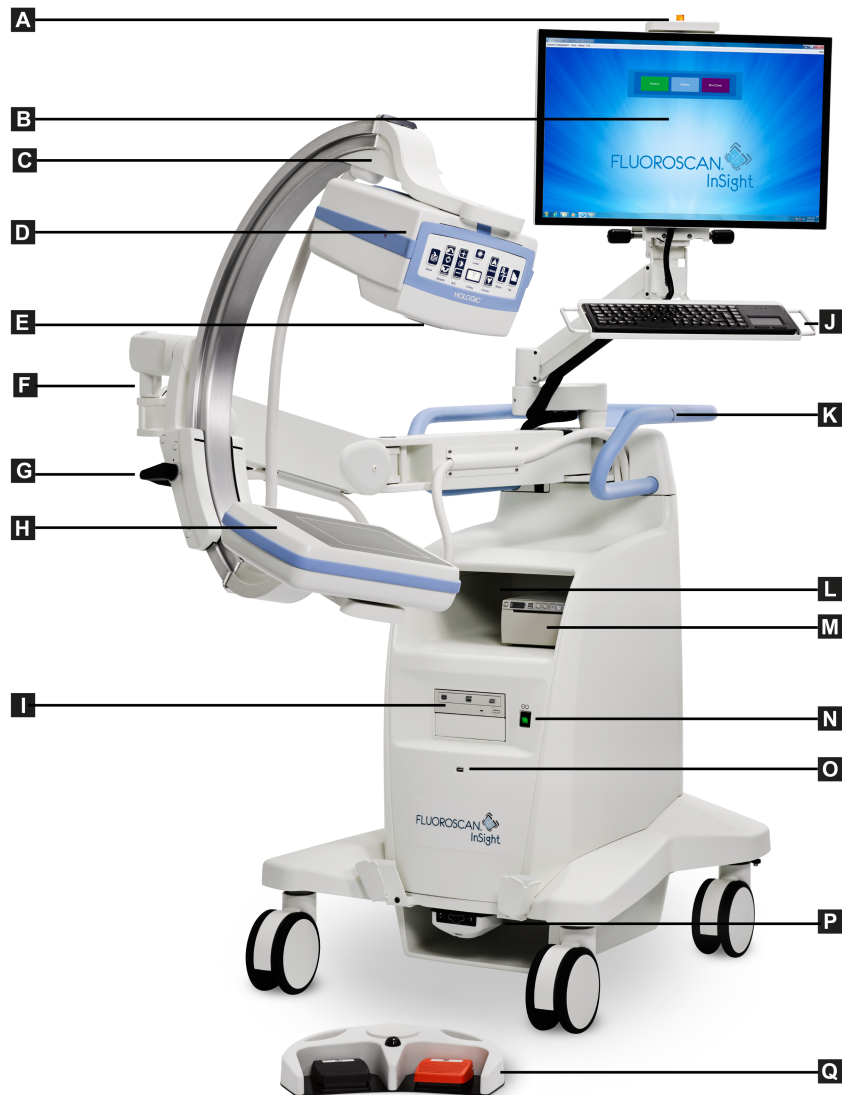
Safety Hazard	Cause	Course of Action
Device Safety	 <p><i>Injury could result if unapproved devices are connected to the system.</i></p> <p>Certain devices were tested for use with the InSight FD System, use only these or compatible devices.</p>	Do not connect any devices to the system other than those described in this manual. Internally connected devices should be installed only by persons trained in the servicing of this system.
Electrosurgical Device	This system is shielded from electrical discharges. However, there is still a possibility that an electrosurgical device discharged directly into the system could adversely affect system operation. In addition, shielding might not always protect the system from the amount of energy produced by a spark-gap type device.	<p>If a strong electrosurgical surge causes the system to malfunction:</p> <p>Turn the system off</p> <p>Wait five seconds.</p> <p>Turn the system on.</p> <p>If the problem persists after resetting the system twice, request service.</p>
Tripping	 <p>Cables and cords can pose a tripping hazard.</p>	Position cords safely out of the way. When not in use, wind cords securely around the cord management plates.
Pinching Hazards	 <p>Movement of the monitor arm poses a potential pinching hazard. The monitor arm may contact the Flex arm, C-arm, or handle.</p>	Place hands and fingers in a safe position when repositioning the monitor arm. Avoid placing hands and fingers in joints and system pivot points.
Damaged Power Cord	A damaged power cord can be an electrical shock hazard.	Make sure that the power cord for the InSight FD Mini-C-arm is in good condition. When disconnecting the console from power, always grasp the plug at the insertion point and pull lightly. NEVER pull on the cord to unplug the unit.



**Table 4     Safety Hazards (Continued)**

<b>Safety Hazard</b>	<b>Cause</b>	<b>Course of Action</b>
<b>Obstructed View</b>	 The system may hinder visibility to surgical workspace.	It is best to move system away from the surgical site after imaging.

# 11 System Components



A	X-ray ON light	J	Keyboard with integrated pointing device
B	Touch screen monitor	K	C-arm retainer clamp placement line
C	C-arm retainer	L	Image printer shelf
D	X-ray head	M	Printer
E	Collimation switch	N	Computer On/Standby switch
F	Flex-arm	O	USB port
G	C-arm	P	Front-facing storage tray and wireless footswitch receiver
H	CMOS Detector	Q	Wireless footswitch
I	Optical Drive (CD/DVD RW recorder)		

## 12 Controls and Indicators

### 12.1 X-ray Head Control Panel

Table 5 X-ray Head Control Panel










Symbol	Label	Function
	<b>Save</b>	Saves selected images or cine loop to the record of the patient. If the number of stored images or minutes of cine loop exceeds the storage limit, a message displays.
	<b>Rotate</b>	Rotates the image clockwise or counterclockwise. Press once to rotate 10 degrees. Hold for continuous rotation.
	<b>B/C</b>	Allows adjustment of image brightness and contrast.
	<b>X-ray</b>	Acquires an X-ray exposure. Press the switch once to actuate X-rays. A yellow indicator light located on top of the monitor shows that X-rays are being produced. The X-ray image of the object within the field of view is displayed on the display monitor in real time. When the yellow indicator light is <b>OFF</b> , the monitor displays the image captured at the end of the X-ray exposure — sometimes referred to as the <i>last image hold</i> .
	<b>Laser</b>	Turns on the Positional Laser.* *Press and hold the Laser button for 2 seconds to enable the positional laser to stay on. This option will reset when the system is powered off.

Table 5 X-ray Head Control Panel (Continued)

Symbol	Label	Function
	Noise Suppression	Cycles through the Noise suppression settings that will be used during image acquisition. See <a href="#">Table 23 Physician Preferences, Image Processing Tab, Section/Field Descriptions on Page 50</a> for additional details.
	kV/mA	Increases or decreases technique factors based on selected mode ( <a href="#">Table 22 Physician Preferences, Image Acquisition Tab, Section/Field Descriptions on Page 47</a> ).  Pressing both the up and down power buttons at the same time returns the system to Auto Power mode.
	Mode	Acquisition Mode Selection cycles through: <b>Continuous*</b> – When the user activates X-ray, the yellow X-ray light is ON and the monitor displays continuous real-time X-ray images. When the user deactivates X-rays by releasing the foot pedal or tube head switch, the yellow X-ray light turns OFF, and the last image hold is displayed (i.e., what is on-screen when the X-rays have stopped). <b>Snapshot*</b> – When X-rays are activated, the device acquires a last image hold only. The X-ray dose used for the last image hold depends on the settings for X-ray mode technique factor and noise suppression. The exposure terminates when the user terminates the X-rays. <b>Cine Record</b> – Records the real time fluoroscopy images acquired into a cine loop. *Continuous and/or Snapshot mode may be disabled ( <a href="#">Section 15.5 Physician Preferences on Page 46</a> ).

## 12.2 Keyboard Controls

The keyboard is directly mounted to the monitor mount and has handles for easy rotation and repositioning the monitor during use.

**Table 6 Keyboard Controls**

















Icon	Function Key	Function
	F1	Displays help window.
	F2	Displays the Patient Information window in Image Acquisition session. Displays the Select Study for Review window in Review session.
	F3	Flips image horizontally.
	F4	Rotates image 10 degrees clockwise.
	Shift-F4	Rotates image 10 degrees counterclockwise.
	F5	Decreases kV/mA if simultaneous is on or decreases kV if simultaneous is OFF. Pressing this key puts the system into manual mode.
	Shift-F5	Decreases mA if simultaneous is OFF. Pressing this key puts the system into manual mode.
	F6	Increases kV/mA if simultaneous is on or increases kV if simultaneous is OFF. Pressing this key puts the system into manual mode.
	Shift-F6	Increases mA if simultaneous is OFF. Pressing this key puts the system into manual mode.
	F7	Resets fluoro alarm timer.
	F8	Saves the current image to the patient's record.
	F9	Prints the current image to the local printer.
	F10	Toggles Play back of a recorded cine loop ON/OFF.

Table 6 Keyboard Controls (Continued)

Icon	Function Key	Function
	F11	Restores physician's defaults.
	Shift-F11	Returns the system to Auto Power mode.
	F12	<p>Cycles through the Noise suppression settings that will be used during image acquisition.</p> <p>The noise suppression settings are off, low, medium, high, auto and ultra.</p> <p>Noise suppression off or low has less image blur due to motion, but the image will have significant noise (i.e., speckle). Higher noise suppression (medium, high or ultra) reduces speckle by averaging more frames in the displayed image. The high and ultra noise suppression settings should be used when there is no motion of the anatomy and image clarity is needed.</p> <p>Auto noise suppression varies the noise suppression between low, medium and high, depending on the motion detected by the imaging algorithm.</p>

## 13 InSight FD 20 cm SSD Cone Installation Instructions

Installing the InSight™ FD 20 cm SSD Cone requires:

- aligning the SSD Cone, and
- snapping the cone into the cover.

The estimated time to perform this procedure is five (5) minutes.

**Table 7     Parts List**

Part No	Description
ASY-10630	Kit, SSD 20 cm, InSight FD
FAB-08816	Cone, SSD, FD
MME-01738	Push-in Plug, 8 mm ID, 12 mm Head

### 13.1 Procedure

1. Exit the InSight application.
2. Turn off the system.
3. Disconnect mains power by unplugging the AC line cord.
4. Rotate the C-arm ([Figure 9](#)) to position the source for easy access.

**Figure 8 Rotate the C-arm**



5. Align the slots in the cone with the opening in the cover ([Figure 9](#)).
6. Using your fingers to adjust the feet on the bottom of the cone, insert the cone into the openings (3) on the bottom of the tube head cover.



**Figure 9 Align the Cone**



7. Snap the SSD Cone into place.



**Note**

*Push-in plugs (MME-01738) can be mounted in the cover openings when the SSD Cone is not used.*



8. Rotate the C-arm to a working position.
9. Connect the AC line cord.
10. Turn on power to the system.
11. Log in to the InSight application.
12. Check that the system operates properly.

## 13.2 InSight FD System Footswitch Functions

The footswitch can be used for quick access to several software functions.


**Figure 10 Wireless Footswitch**



**Table 8 Footswitch Pedal Functions**

Ref	Icon	Pedal	Function
1		Save / Tag	Save or Tag images
2		MegaView™ Image and/or Print	User Configurable: • In <b>Perform Mode</b> , you can toggle between standard view and full-screen view (MegaView™ Image) • Print images
3		X-ray	Take X-ray

**Table 8 Footswitch Pedal Functions (Continued)**

Ref	Icon	Pedal	Function
4		Receiver	Bluetooth Receiver



**Note**

*The receiver must be turned **ON** in order to use the footswitch functions.*

*Specific footswitch functions must be enabled in the Physician's Preferences window options:*

- Tag References from Footswitch
- Toggle Full Screen View from Print Footswitch



### 13.2.1 Acquire an X-ray Image

1. To acquire an image, press the **X-ray** pedal (3).
2. Press again to take subsequent images.

### 13.2.2 Display a MegaView Image

When in Perform Mode, press and release **MegaView Image and/or Print (2)** to toggle between **Standard** and **Full-Screen View**.

From the Image Acquisition Screen screen or the Enhanced View screen, double-click on a Megaview image to zoom in on image.

1. Click Review to open scanned image.
2. Double-click on image to open image in Megaview mode.

### 13.2.3 Tag an Image

To mark an acquired image as a reference image, press and release **Save or Tag (1)** once.



### 13.2.4 Save an Image

1. To save the image and deselect as a reference, press and release **Save** or **Tag (1)** a second time.
2. To save the image and mark as a reference, press and release **Save** or **Tag (1)** a third time.

### 13.2.5 Print an Image



**Note**

*The printer has a separate power button. Be sure to power up the printer before attempting to print images from the system.*

To print an image, press and hold **MegaView Image and/or Print (2)**.

### 13.2.6 Storage

When not in use, store the footswitch in the bracket at the front of the system ([Figure 11](#)).

**Figure 11 Footswitch Storage**



**Warning:**

*Position the footswitch and power cords to prevent accidental tripping.*

---

## 14 Using the System



**Note**

*InSight FD operators should read the Radiation Safety section before operating the system.*

### 14.1 Moving the System



**Warning:**

*Before moving the system, the C-arm must be in the locked storage position to prevent overbalancing.*

1. Ensure that the system is powered OFF.  
See [Section 14.5 Powering Down the System](#) on Page 35.)
2. Unplug the power cord and wrap it around the cord guides on the back of the cabinet.
3. Place the foot switch in the footswitch bracket ([Figure 12](#))

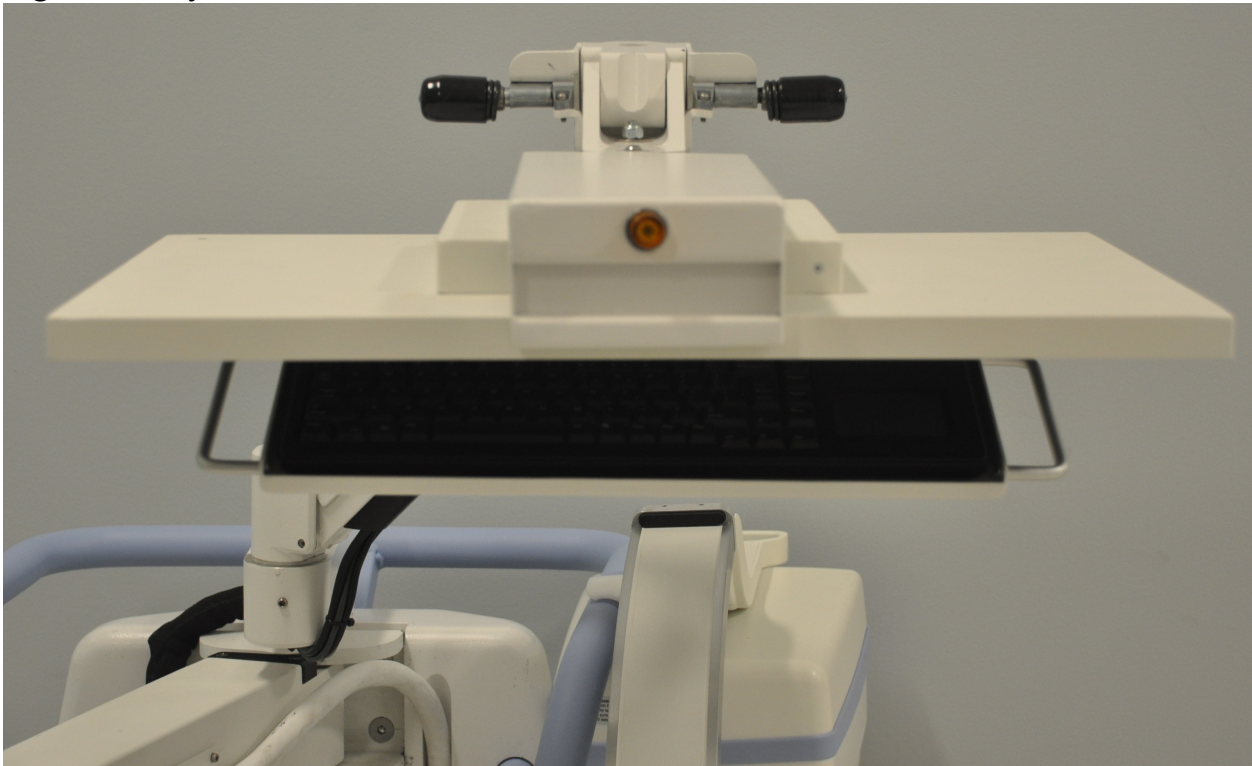
**Figure 12 Footswitch in Bracket**





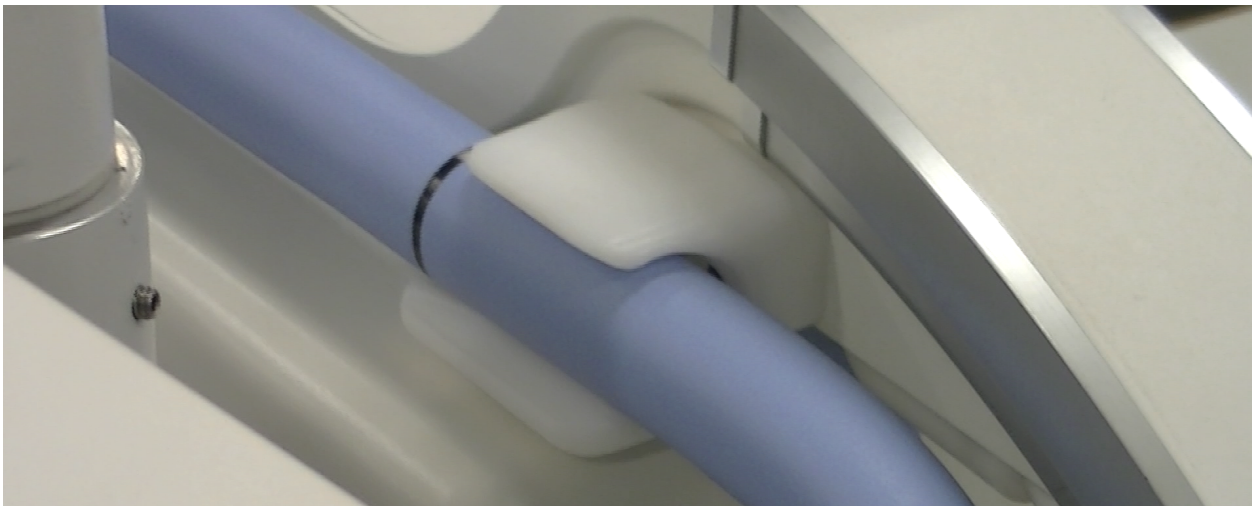
4. Using the cutout on the mount, flip the monitor forward and down ([Figure 13](#)).

**Figure 13 Keyboard in Down Position**



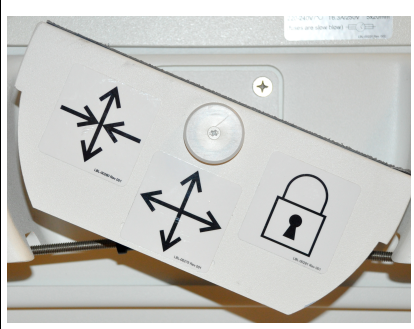
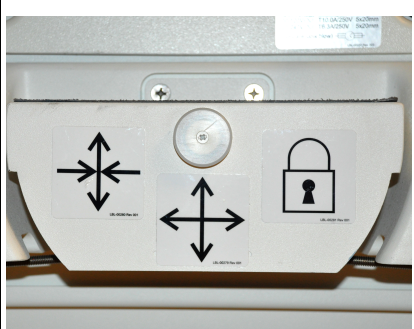
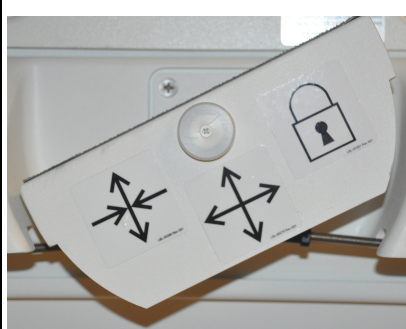



5. Push the C-arm down to align the C-arm clamp with the handle.
6. Swing the arm to the right side of the machine.
7. Align the C-arm clamp to the front side of the black indicator line on the handle to prevent damage to the detector during transport.
8. Push the C-arm firmly into the clamp to attach and lock the flex-arm and C-arm ([Figure 14](#)).

**Figure 14 C-arm in Transport Position**



- Lock the rear casters to prevent the system from moving. The swiveling angle of the rear casters can be locked to prevent lateral movement of the system or unlocked to allow lateral movement.

**Figure 15 Rear Casters**

		
Rear Wheels Locked	Rear Wheels Free to Move in All Directions	Rear Wheels Move Forward and Back Only
		

## 14.2 Adjusting the C-arm



### Caution

*When moving the arm of the system, it may collide with the system itself or surrounding equipment. Collisions may cause damage to the system or other equipment.*

Turn the flex-arm lock counterclockwise to loosen; then adjust the flex-arm height.

To reposition the C-arm:

- Turn the C-arm lock to loosen.
- Roll the arm to the desired position.
- Turn to lock the arm in place.

The locking lever can also be positioned between open and locked to provide various levels of resistance to arm roll.



### Caution



*When the casters are in the locked position or obstructed, do not attempt to move the system from the left or right side or by pushing on the system C-arm or the mast.*

Figure 16 Adjusting the C-arm



## 14.3 Sterile C-arm Drape

Before using the InSight FD Mini C-arm in the operating room, fit the C-arm with a sterile drape. Small labels on the drape indicate how to fit the drape to the X-ray head and to the CMOS detector.



**Note**

*After use, dispose of sterile C-arm drape properly (in a biohazard container).*



**Caution**

*Contamination of the sterile field may occur when moving the system. This may occur when the C-arm is draped.*

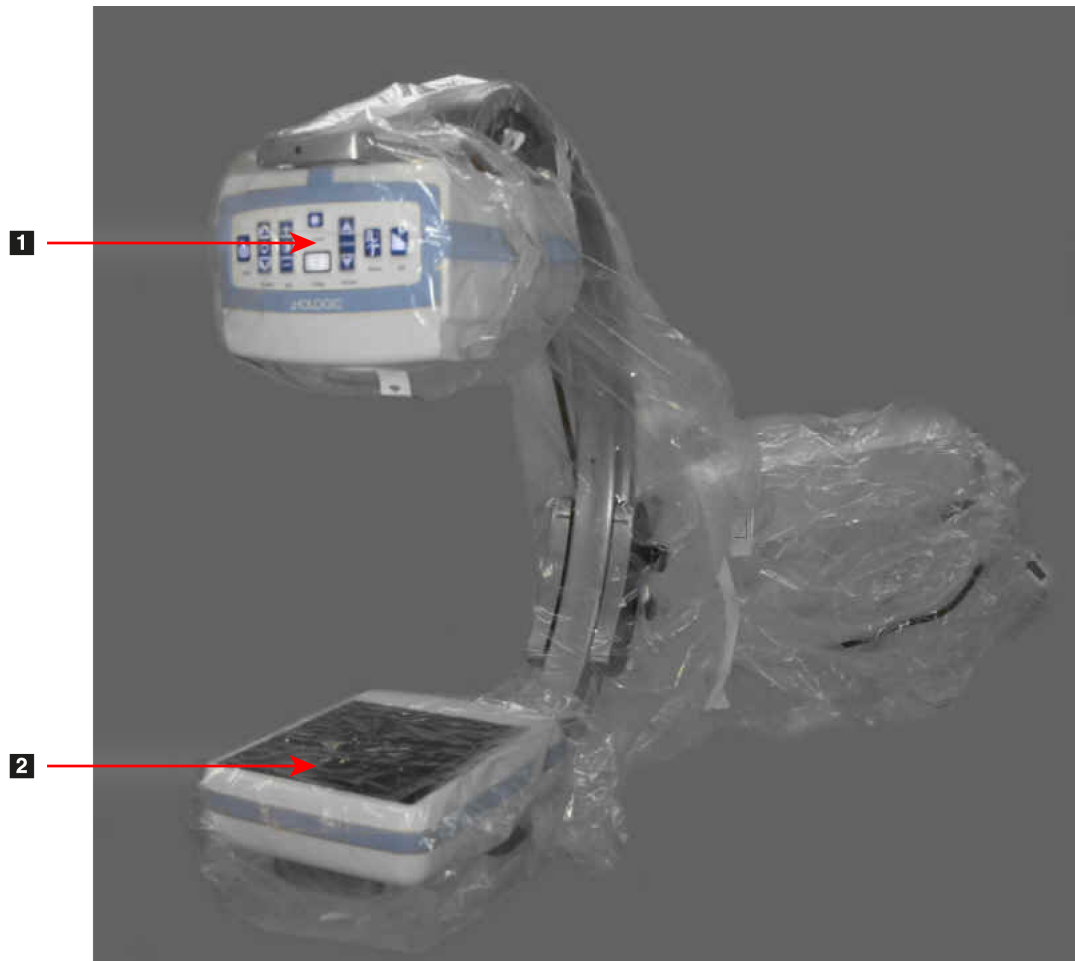


**Caution**

*If the drape becomes damaged during application or from use, dispose of the damaged drape and fit a new sterile drape to the system.*



**Figure 17 Sterile C-arm Drape**



1. X-ray Head
2. Detector

## 14.4 Powering Up the System



**Warning:** *The InSight FD system operates on standard 115 Volt, 60 Hz AC power for United States, Japanese and Canadian models, 230 Volt, 60 Hz AC, and 240 volt, 50 Hz AC power for other export models.*

- *The system should only be plugged into a properly grounded three-wire wall outlet.*
  - *Never cut the third (grounding) pin from the power cord to plug the unit into an ungrounded two wire outlet. Never use a three wire-to-two wire adapter.*
- 

The system should be at ambient room temperature.

The power cord must be plugged into a standard single-phase three-wire grounded outlet. A special dedicated outlet is not required.

To power up the system, press the **Computer On/Standby** switch. InSight FD will prompt the user to log in.

If the system has been off for more than two weeks, use the following source conditioning procedure to safeguard and prolong the life of the X-ray source:

**Table 9     Conditioning Schedule**

Step	kV	mA	Minimum Time
1	43	0.05	2 minutes
2	50	0.10	2 minutes
3	60	0.10	2 minutes
4	70	0.10	3 minutes
5	75	0.10	3 minutes



**Caution**

*The system must warm up for FOUR MINUTES before generating X-rays. Failure to provide adequate warm up could result in damage to the system.*

## 14.5 Powering Down the System



**Caution**

*Be sure to save images before shutdown.*

To close the application and place the system in standby:

- From the **InSight FD Main Screen** click the **Shut Down** button.
- From the **Exit Menu** on the **InSight FD Main Screen**, click **Exit** before unplugging the power cord.

# 15 Configuring the Application

## 15.1 System Configuration User Interface

System configuration user interface consists of a multiple-page tab-selected window. Each tab displays a page of configuration data.

Four buttons display at the bottom of the window that are independent of the selected page:

**Table 10** System Configuration User Interface

Button	Function
OK	Saves data for all System Configuration pages and closes the window.
Apply	Saves data for the currently selected System Configuration page.
Cancel	Closes the window without saving any data.
Help	Displays help for the selected page.

## 15.2 System

From the **System Configuration** Menu ([Figure 18](#)) on the **Main Screen**, the **System** page ([Figure 19](#)) is accessible.

**Figure 18** System Configuration Menu

System Attributes
DICOM Send
DICOM Print
Worklist
Users
Physician Preferences
Administrative Settings

**Figure 19 System**

**Table 11 System Page**

Section/Field	Description
<b>InSight FD Software Serial Number Software</b>	InSight FD system serial number. dropdown list to display installed software and version.
<b>Status</b>	Displays the current settings for:
Date of Last System Recover	Date application settings and configuration data were recovered from backup media.
Touch Screen	Enabled/Disabled.
Audit Mode	On/Off.
Number of Active Users	Number of active registered users allowed to log into the system.
Image Storage (number of images)	Maximum number of images* that can be stored on the system and the number currently stored. *Maximum number of images refers to Standard Resolution images. High Resolution images require more storage space.

Table 11 System Page (Continued)

Section/Field	Description
<b>Cine Loop Storage (minutes of recording)</b>	Maximum minutes of recording that can be stored on the system and the minutes currently stored.
<b>Organization Name</b>	Administrator can enter name.
<b>Default Physician's Name</b>	Select default physician to be used by the application.
<b>Selected Language</b>	Select language to be used by the application.
<b>Selected DAP Units</b>	Select DAP units to be used by the application (cGy*cm <sup>2</sup> or mGy*cm <sup>2</sup> )
<b>Query on Delete</b>	Administrator can select to display warning message when deleting images.
<b>Brightness/Contrast Adjustment</b>	Sets the amount of time (from 1 to 60 seconds) that the Brightness/Contrast adjustment dialog will be displayed.
<b>DICOM Application Information</b>	AE Title and Station Name for the application. IP Address displays the network address assigned to the system the application is running on. Station Name allows multiple systems to use the same AE Title.

## 15.3 DICOM Send Options

Available from **System Configuration** Menu (Figure 18) on the **Main Screen**.  
Connect an ethernet cable to the system prior to executing the following steps.

**Figure 20 DICOM Send Options**

**Table 12 DICOM Send Options Page**

Section/Field	Description
<b>Configure DICOM Send Destinations</b>	Selection list of DICOM Send destinations configured on the system and six function buttons. When checked, the <b>Active</b> column check box enables destination for use.
<b>Add/Edit Destination</b>	Entry/edit fields to identify a DICOM Send destination, three check boxes, and two function buttons.
<b>AE Title</b>	Destination's Application Entity Title.
<b>Host Name or IP Address</b>	Destination's Name or IP address.
<b>Port</b>	Destination's Port number.

Table 12 DICOM Send Options Page (Continued)

Section/Field	Description
<b>Use as Storage Commitment Provider</b>	When checked, indicates the destination is committed to storing information sent to it. During a normal shut down, if any DICOM Commit queue entries are greater than 7 days old, a message box appears indicating: <i>DICOM Storage Commitment Queue contains entries older than 7 days. DO you want to delete them?</i>
<b>Include Raw Data</b>	When checked, indicates studies sent to the destination shall include the raw data.
<b>Include Annotations</b>	When checked, includes annotations with exported images. Method of inclusion choices are: Embedded - Annotations are embedded into the bitmap image. As Overlay - Annotations are included as a DICOM overlay. As annotation files - Annotations are included as a separate file.

Table 13 DICOM Send Options Page, Button Functions

Button	Function
<b>Add Destination</b>	Adds a DICOM Send destination to the system.
<b>Edit Destination</b>	Edits selected destination information.
<b>Delete Destination</b>	Deletes selected destinations from the system.
<b>Local Ping</b>	Confirms connection to the local network.
<b>Remote Ping</b>	Confirms network connection to the selected destination.
<b>C-ECHO</b>	Confirms network connection to PACS.
<b>OK</b>	Updates the selection list with new or updated information and checks the destination's Active check box.
<b>Cancel</b>	Ignores all edits and hides the Add/Edit Destination section.

### 15.3.1 DICOM Print Options

Available from System Configuration Menu ([Figure 18](#)) on the Main Screen.

**Figure 21 DICOM Print Options**

**Table 14 DICOM Print Options Page, Section/Field Descriptions**

Section/Field	Description
<b>Configure DICOM Print Destinations</b>	Selection list of DICOM Print destinations configured on the system and six function buttons. When checked, the <b>Active</b> column check box enables destination for use.
<b>Add/Edit Destination</b>	Entry/edit fields to identify a DICOM Print destination, a section for entering and selecting print parameters, and two function buttons.
<b>AE Title</b>	Destination's Application Entity title.
<b>Host Name or IP Address</b>	Destination's Name or IP address.
<b>Port</b>	Destination's Port number.
<b>Destination Name</b>	Name for destination (allows a single destination to be configured in multiple ways).
<b>Print Parameters</b>	



**Table 14 DICOM Print Options Page, Section/Field Descriptions (Continued)**

Section/Field	Description
Number of Copies	Enter number of copies to print.
Image Display Format	Select (row and column) from dropdown list.
Orientation	Select image layout (Portrait or Landscape).
Film Size	Select from dropdown list.
Medium Type	Select from dropdown list.
Decimate/Crop Behavior	Select from dropdown list.

**Table 15 DICOM Print Options Page, Button Functions**

Button	Function
<b>Add Destination</b>	Adds a DICOM Print destination to the system.
<b>Edit Destination</b>	Edits selected destination information.
<b>Delete Destination</b>	Deletes selected destinations from the system.
<b>Local Ping</b>	Confirms connection to the local network.
<b>Remote Ping</b>	Confirms network connection to the selected destination.
<b>C-ECHO</b>	Confirms network connection to PACS.
<b>OK</b>	Updates the selection list with new or updated information and checks the destination's Active check box.
<b>Cancel</b>	Ignores all edits and hides the Add/Edit Destination section.

## 15.4 Worklist Configuration

Available from **System Configuration** Menu (Figure 18) on the **Main Screen**.

**Figure 22 Worklist Configuration**

**Table 16 Worklist Configuration, Section Descriptions**

Section/Field	Description
<b>Worklist Provider</b>	Identifies the system to access for the Worklist by providing entry fields for the provider's AE Title, Host Name or IP Address, and Port.
<b>Use Performed Procedure Step</b>	When checked, DICOM Modality Performed Procedure Step shall be performed when required.
<b>Provider</b>	Allows the user to access a system other than the one identified in the Worklist Provider section. When <i>Use Worklist Provider Data</i> is checked, AE Title, Host Name or IP Address, and Port fields are automatically populated with data identical to the contents of the corresponding fields in the Worklist Provider section. When unchecked, the fields can be populated by the user.

Table 16 Worklist Configuration, Section Descriptions (Continued)

Section/Field	Description
<b>Query Parameters</b>	Provides entry fields to identify: <ul style="list-style-type: none"> <li>• Requesting system (AE Title)</li> <li>• Type of worklist being requested (Modality)</li> <li>• Range of days to query</li> <li>• Maximum number of scheduled patient examinations to include in the worklist</li> </ul>
<b>Auto Query Interval</b>	Specifies if automatic queries are to be performed and how often.
<b>Query Retry Parameters</b>	Specifies if queries are to time out after a specific time (Query Timeout check box and Min selection), and number of times to retry and time intervals.
<b>Worklist sets Modality</b>	When checked, Modality is set by the Worklist.

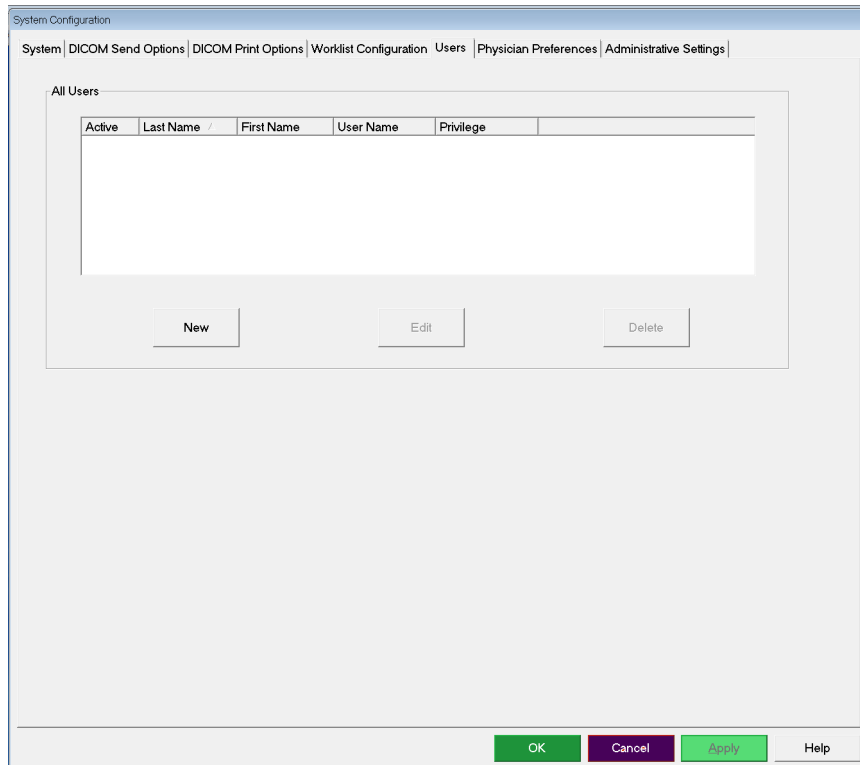
Table 17 Worklist Configuration, Button Functions

Button	Function
<b>Map Worklist Fields</b>	Displays Map Worklist Keys window. Administrators can map InSight FD data fields to Worklist provider data fields.
<b>Local Ping</b>	Confirms connection to the local network and display the results.
<b>Remote Ping</b>	Confirms network connection to the Worklist Provider or Provider system.
<b>C-ECHO</b>	Confirms network connection to the PACS.

### 15.4.1 Users

Available from **System Configuration Menu** ([Figure 18](#)) on the **Main Screen**.

**Figure 23 Users**



**Table 18 Users Page, Section/Field Descriptions**

Section/Field	Description
<b>All Users</b>	Displays selection list of registered system users. When checked, the <b>Active</b> column check box allows user to log into the system.
<b>Add/Edit User</b>	Administrator entry/edit fields for user's actual name, login user name, login password, and privilege.

**Table 19 Users Page, Button Functions**

Button	Function
<b>New</b>	Adds new users to the system.
<b>Edit</b>	Edits selected user information.
<b>Delete</b>	Deletes the selected user from the system.
<b>OK</b>	Updates the user list.
<b>Cancel</b>	Ignores all edits and removes the Add/Edit User section.

## 15.5 Physician Preferences

Available from **System Configuration Menu** (Figure 18) on the **Main Screen**.

**Table 20 Physician Preferences, Section/Field Descriptions**

Section/Field	Description
<b>Set System Defaults or Physician Defaults</b>	Select system defaults to be used for visiting physician. Select physician defaults to set defaults for a selected physician.
<b>Select Physician to set details for</b>	Selection list of all physicians registered on the system, entry fields for physician's name, and two buttons (Add Physician and Delete Physician).

**Table 21 Physician Preferences, Button Functions**

Button	Function
<b>Add Physician</b>	Adds the physician's name and default preferences to the system.
<b>Delete Physician</b>	Deletes the selected physician from the system.
<b>Reset Defaults</b>	Resets all the preference settings to the factory defaults if editing system defaults, or to the system defaults if editing physician preferences. If system defaults have not yet been saved, all settings are reset to the factory defaults.
<b>Save</b>	Saves the preference settings for the System Defaults or for the selected physician.

## 15.6 Physician Preferences — Image Acquisition

Displays the current default preference settings for the system or the selected physician. Settings can be customized by an administrator.

**Figure 24 Physician Preferences — Image Acquisition**

The screenshot shows the 'Physician Preferences' window with the 'Image Acquisition' tab selected. The window has a sidebar on the left with options: 'Set System Defaults or Physician Defaults', 'Set System Defaults', and 'Set Defaults for Selected Physician'. The main area contains the following settings:

- Snapshot Fluoro:** Radio buttons for 'Enabled' (selected) and 'Disabled'.
- Continuous Fluoro:** Radio buttons for 'Enabled' (selected) and 'Disabled'.
- Cine Record:** Radio buttons for 'Enabled' (selected) and 'Disabled'.
- Default Image Mode:** A dropdown menu set to 'Continuous'.
- X-ray Mode:** Checkboxes for 'Auto' (checked), 'Auto IQ' (checked), 'Low Dose' (checked), and 'High Resolution' (checked).
- X-ray Technique:** A slider between 'Darker' and 'Brighter'.
- Simultaneous kV/mA:** Radio buttons for 'Enabled' (selected) and 'Disabled'.
- Alarm on Footswitch:** Radio buttons for 'Enabled' (selected) and 'Disabled'.
- Time to x-ray Alarm:** A time picker set to 05:00 min:sec.
- Limit Session x-ray:** Radio buttons for 'Enabled' (selected) and 'Disabled', with a time picker set to 10:00 min:sec.
- Right Side Display:** A dropdown menu set to '4-Image Filmstrip'.
- Thumbnail Hold:** A time picker set to 1 sec.

At the bottom of the main area are 'Reset Defaults' and 'Save' buttons. At the very bottom of the window are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

**Table 22 Physician Preferences, Image Acquisition Tab, Section/Field Descriptions**

Section/Field	Description
<b>Snapshot Fluoro</b>	Enables/disables Snapshot image acquisition mode.
<b>Continuous Fluoro</b>	Enables/disables Continuous image acquisition mode.

Table 22 Physician Preferences, Image Acquisition Tab, Section/Field Descriptions

Section/Field	Description
<b>Default Image Mode</b>	Selects initial image mode setting for Image Acquisition screen.
<b>X-ray Mode</b>	Selects active X-ray modes. Choose from Auto, Auto IQ, Low Dose, and High Resolution. One of Auto, Auto IQ, or Low Dose must be enabled, or the system will enable Auto mode. The system default enables all modes.
<b>X-ray Technique</b>	Slider control with 15 selectable settings from “Darker” to “Brighter” for preferred selection of the kVp and mA under automatic exposure control. Changing this value to “Darker”/ “Brighter” will marginally decrease/increase the kVp and mA chosen by the automatic exposure control and, as a consequence, the corresponding dose to the patient.
<b>Simultaneous kV/mA</b>	When enabled, kV / mA goes up/down together to the next dose curve pair when manually adjusting X-ray power. When disabled, kV and mA can be adjusted independently.
<b>Alarm on Footswitch</b>	Enables or disables setting of the alarm to sound when the X-ray footswitch is depressed or released.
<b>Time to X-ray Alarm</b>	Sets when the alarm will sound based on the accumulated X-ray exposure time. Maximum value is 5 minutes.
<b>Limit Session X-ray</b>	Sets a limit* to the cumulative X-ray exposure time. Within 30 seconds of the set limit (maximum value is 10 minutes), a warning appears in the upper right corner of the screen. If you do not extend the session, you will be warned to extend or end the session. *The X-ray is disabled after the x-ray exposure time has reached the limit. A User must to exit a session and re-enter o continue.
<b>Right Side Display</b>	Selects initial filmstrip/tools area setting for Image Acquisition screen.
<b>Thumbnail Hold</b>	Determines the time a thumbnail image is displayed after the acquisition ends.

## 15.7 Physician Preferences — Image Processing

Displays the current default preference settings for the system or the selected physician. Settings can be customized by an administrator.

**Figure 25 Physician Preferences — Image Processing**

The screenshot shows the 'Physician Preferences' dialog box with the 'Image Processing' tab selected. The dialog has a title bar 'System Configuration' and a menu bar with 'System', 'DICOM Send Options', 'DICOM Print Options', 'Worklist Configuration', 'Users', 'Physician Preferences', and 'Administrative Settings'. On the left, a sidebar titled 'Set System Defaults or Physician Defaults' contains two options: 'Set System Defaults' and 'Set Defaults for Selected Physician'. The main area is divided into three sections: 'Noise Suppression', 'Image Enhancement', and 'Brightness / Contrast Adjustment'. The 'Noise Suppression' section has radio buttons for 'Ultra' (selected), 'Auto', 'High', 'Medium', 'Low', and 'Off', a 'Default Setting' dropdown set to 'Auto', and checkboxes for 'Disable during cine record' and 'Auto image enhancement on High or Ultra only'. The 'Image Enhancement' section has a dropdown set to 'Edge', radio buttons for 'On', 'Off', and 'Disabled' (selected), and similar radio button sets for 'Reverse Video', 'Image Flip', and 'Dark Fluoro'. The 'Brightness / Contrast Adjustment' section has checkboxes for 'Remember settings between sessions' and 'Apply Auto Equalization after acquisition'. At the bottom of the main area are 'Reset Defaults' and 'Save' buttons. The dialog footer contains 'OK', 'Cancel', 'Apply', and 'Help' buttons.

System Configuration

System | DICOM Send Options | DICOM Print Options | Worklist Configuration | Users | Physician Preferences | Administrative Settings

Set System Defaults or Physician Defaults

- Set System Defaults
- Set Defaults for Selected Physician

Image Acquisition | Image Processing | Image Management

Noise Suppression:

- ☒ Ultra
- ☐ Auto
- ☐ High
- ☐ Medium
- ☐ Low
- ☒ Off

Default Setting: Auto

☐ Disable during cine record

☐ Auto image enhancement on High or Ultra only

Image Enhancement: Edge

- ☐ On
- ☒ Off
- ☐ Disabled

Reverse Video: ☐ On ☒ Off ☐ Disabled

Image Flip: ☐ On ☒ Off ☐ Disabled

Dark Fluoro: ☐ On ☐ Off ☒ Disabled

Initial Image Rotation: 0 Degrees

Brightness / Contrast Adjustment:

- ☐ Remember settings between sessions
- ☐ Apply Auto Equalization after acquisition

Reset Defaults Save

OK Cancel Apply Help



Table 23 Physician Preferences, Image Processing Tab, Section/Field Descriptions

Section/Field	Description
<b>Noise Suppression</b>	<p>Cycles through the Noise suppression settings that will be used during image acquisition.</p> <p>The noise suppression settings are <b>Off, Low, Medium, High, Auto</b> and <b>Ultra</b>.</p> <p>Noise suppression <b>OFF</b> or <b>Low</b> has less image blur due to motion, but the image will have significant noise (i.e., speckle).</p> <p>Higher noise suppression (<b>Medium, High Or Ultra</b>) reduces speckle by averaging more frames in the displayed image. The <b>High</b> and <b>Ultra</b> noise suppression settings should be used when there is no motion of the anatomy and image clarity is needed.</p> <p><b>Auto</b> noise suppression varies the noise suppression between <b>Low, Medium</b> and <b>High</b>, depending on the motion detected by the imaging algorithm.</p> <p><b>Disable during cine record</b> - When checked, disables noise suppression when cine recording.</p> <p><b>Auto edge enhancement on High or Ultra only</b> - When checked, image enhancement occurs only when noise suppression is set to <b>High or Ultra</b>.</p> <p><b>Default Setting</b> defines the initial noise suppression for an image acquisition session. Select <b>Ultra, Auto, High, Medium, Low</b>, or <b>Off</b> from the dropdown list.</p>
<b>Image Enhancement</b>	<p>Select Edge or Sharpen from the dropdown list. Edge enhancement increases visualization between bone and soft tissue in the image. Sharpening enhancement increases visualization of fine detail. On/Off or Disabled affects the “image effects settings” in the Image Acquisition screen.</p>
<b>Reverse Video</b>	<p>Select On/Off or Disabled, which affects the “image effects settings” in the Image Acquisition screen.</p>
<b>Image Flip</b>	<p>Select On/Off or Disabled, which affects the “image effects settings” in the Image Acquisition screen.</p>
<b>Dark Fluoro</b>	<p>Select On/Off or Disabled, which affects the “image effects settings” in the Image Acquisition screen.</p>
<b>Initial Image Rotation</b>	<p>Enter number of degrees to automatically rotate an image while it is being acquired. Enter a negative number for counterclockwise rotation.</p>

**Table 23 Physician Preferences, Image Processing Tab, Section/Field Descriptions**

Section/Field	Description
<b>Brightness/Contrast Adjustment</b>	<b>Remember settings between sessions</b> - When checked, maintains Brightness/Contrast settings for subsequent images. <b>Apply Auto Equalization after acquisition</b> - When checked, applies Auto Equalization to the image to optimize contrast.

## 15.8 Physician Preferences — Image Management

Displays the current default preference settings for the system or the selected physician. Settings can be customized by an administrator.

**Figure 26 Physician Preferences — Image Management**

The screenshot displays the 'Physician Preferences' window, specifically the 'Image Management' tab. The window is titled 'System Configuration' and has a navigation bar with tabs: System, DICOM Send Options, DICOM Print Options, Worklist Configuration, Users, Physician Preferences, and Administrative Settings. The 'Physician Preferences' tab is active, and within it, the 'Image Management' sub-tab is selected. On the left, there are two radio buttons: 'Set System Defaults' (selected) and 'Set Defaults for Selected Physician'. The main area contains the following settings:

- Printed Images:**
  - Images per sheet: 1 (dropdown menu)
  - Number of copies: 1 (text input)
- Tag Reference from Footswitch:** Enabled (radio button selected, Disabled is also present)
- Toggle Full Screen View from Print Footswitch:** Enabled (radio button selected, Disabled is also present)
- Auto Save Images:** Enabled (radio button selected, Disabled is also present)

At the bottom of the main area are 'Reset Defaults' and 'Save' buttons. The footer bar contains 'OK', 'Cancel', 'Apply', and 'Help' buttons.

**Table 24 Physician Preferences, Image Management Tab, Section/Field Descriptions**

Section/Field	Description
<b>Printed Images</b>	Select Number of Images per sheet and Number of copies to print.
Tag Reference from Footswitch	<p>When Enabled:            Press the Save footswitch once to tag the image as a reference image.            Press Save a second time to save the image and remove the reference tag.            Press Save a third time to re-tag the image as a reference image.</p> <p>When Disabled:            Press the Save footswitch once to save the image (does not tag the image as a reference image).</p>
<b>Autosave Images</b>	<p>To automatically save scanned images during a session, select <b>Enabled</b> to activate <b>Autosave Images</b>*.</p> <p>*If <b>Alarm on Footswitch</b> is enabled, a tone for X-ray ON will sound followed by the tone indicating that an image has been saved.</p>

## 15.9 Administrative Settings Page

Available from System Configuration Menu on the Main Screen.

**Table 25 Administrative Settings, Section Descriptions**

Section/Field	Description
<b>Log Files</b>	Selection list of all log files.
<b>Set Level of Detail</b>	Administrators can set System Error log level of detail to Error Only or Error and Operations.
<b>Audit Mode</b>	Administrators can set on or off.
<b>Enable Touch Screen</b>	Administrators can enable or disable.
<b>Automatic Image Deletion</b>	<p>Check <b>Delete</b> at the following limits to:</p> <p>Establish the number of images at which a deletion prompt is displayed and the number of images to be deleted and</p> <p>Establish the number of cine minutes at which a deletion prompt is displayed and the number of cine minutes to be deleted.</p> <p>Prior to deletion, the system displays the number of studies required to achieve the desired number of image, or cine minute, deletions.</p>

**Table 25 Administrative Settings, Section Descriptions (Continued)**

Section/Field	Description
<b>Last System Backup</b>	Displays date of last system configuration and calibration backup. Display warning if last backup is older than __ days When checked, upon starting the application the system will display a warning message when the last backup is older than the given number of days.
<b>System Shutdown</b>	Administrators can check or uncheck. When checked, the full system shuts down (default setting). When unchecked, only the InSight FD application shuts down.

**Table 26 Administrative Settings, Button Functions**

Button	Function
<b>Configure</b>	Displays Level of Detail section.
<b>Accept Change</b>	Changes detail level for System Error log to that selected by Error Only or Error and Operations button. Hides the Set Level of Detail section.

## 16 Using the Application

You can select buttons, menus, menu functions, icons, and position the insertion cursor in fields by:

- Positioning the cursor on the respective item and clicking the left mouse button, or
- Touching the item on the touch screen if enabled.

In this manual “click” indicates both ways.

The main screen appears if **Audit Mode** is on. If Audit mode is off, the **Image Acquisition** screen is displayed.

### 16.1 Patient Positioning

Place anatomy of the patient on the detector in the desired position. Use the positional lasers for more precise positioning if needed.

## 16.2 Main Screen

Figure 27 Main Screen

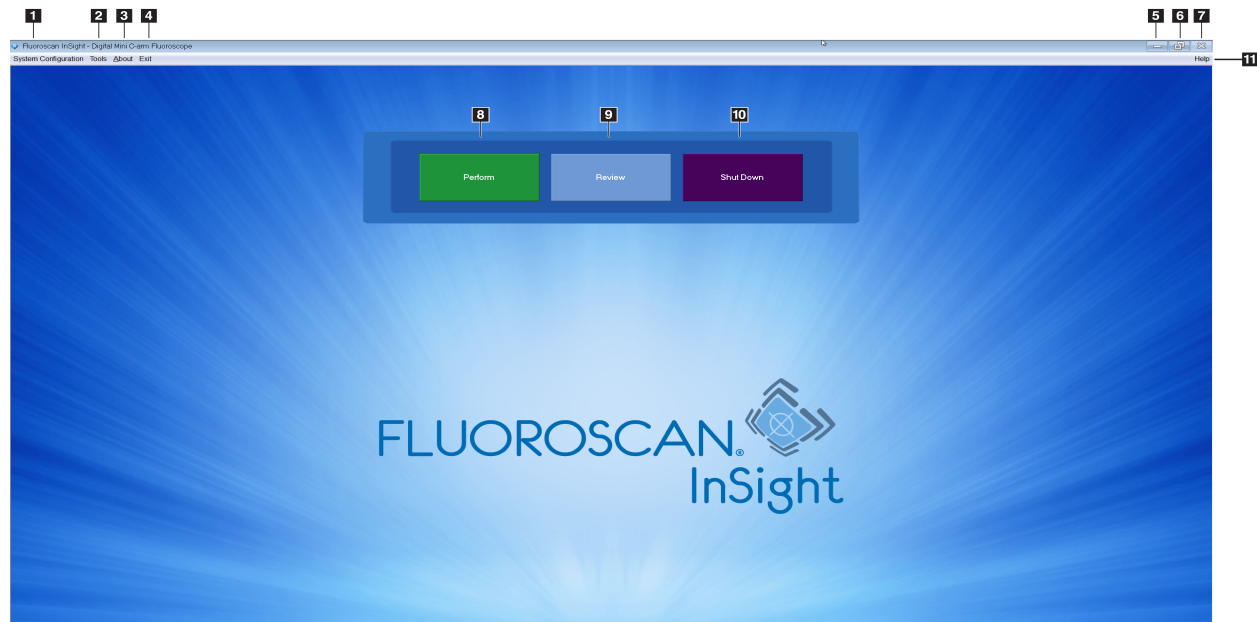
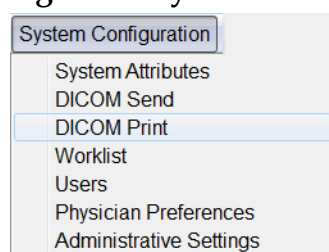


Table 27 Main Screen Options

1	System Configuration Menu ( <a href="#">Table 28</a> ).
2	Tools Menu ( <a href="#">Table 29</a> )
3	<b>About</b> Displays InSight FD application's version number, serial number, and copyright data.
4	<b>Exit</b> Menu. Allows the user to logout or exit the application.
5	Minimize the screen
6	Maximize the screen
7	Close the Application screen (unavailable)
8	<b>Help</b> Displays help for using the screen.
9	Starts an image acquisition session ( <a href="#">Section</a> on Page 58)
10	Starts an image review session ( <a href="#">Section 16.5.2 Review Screen</a> on Page 73)
11	Exits application and shuts down the system.

**Figure 28 System Configuration Pull-down Menu****Table 28 System Configuration Menu**

Function	Description
<b>System Attributes</b>	Administrators can enter organization name, select default physician's name to be used by the application, select default language, enter DICOM application information and check if warning message should display when deleting images. All users can view system information. <a href="#">Section 15.2 System</a> on Page 36
<b>DICOM Send</b>	<i>Present if the DICOM Send option is installed.</i> Administrators can add, edit, delete, and activate/deactivate Send destinations. All users can view the list of destinations, view destination information, and ping destinations. <a href="#">Section 15.3 DICOM Send Options</a> on Page 39
<b>DICOM Print</b>	<i>Present if the DICOM Print option is installed.</i> Administrators can add, edit, delete, and activate/deactivate Print destinations. All users can view the list of destinations, view destination information, and ping destinations. <a href="#">Section 15.3 DICOM Send Options</a> on Page 39
<b>Worklist</b>	<i>Present if the Worklist options is installed.</i> Administrators can add and configure a source. All users can view the source information and ping the source. <a href="#">Section 15.4 Worklist Configuration</a> on Page 43
<b>Users</b>	User privileges within InSight FD are managed by Windows user accounts. Administrators can: <ul style="list-style-type: none"> <li>• Add new user mappings</li> <li>• Edit existing user data, status (active/inactive) and privilege settings</li> <li>• Delete user mapping.</li> </ul> All users can view the list of users registered on the system. <a href="#">Section 15.3.1 DICOM Print Options</a> on Page 41

Table 28 System Configuration Menu (Continued)

Function	Description
<b>Physician Preferences</b>	Administrators can maintain a list of registered physicians and edit default preferences. All users can view the list of physicians registered on the system and view the default preferences for each physician. <a href="#">Section 15.4 Worklist Configuration</a> on Page 43
<b>Administrative Settings</b>	Administrators can change the System/Error log level of detail, turn audit mode on or off, enable or disable the touch screen, view the date of the last system configuration backup, and turn on or off the feature to shut down the system upon application shutdown. All users can view log file statistics and the data maintained by administrators. <a href="#">Section 15.9 Administrative Settings Page</a> on Page 52

Figure 29 Tools Pull-down Menu

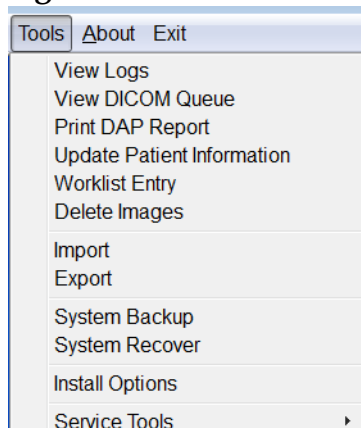


Table 29 Tools Menu


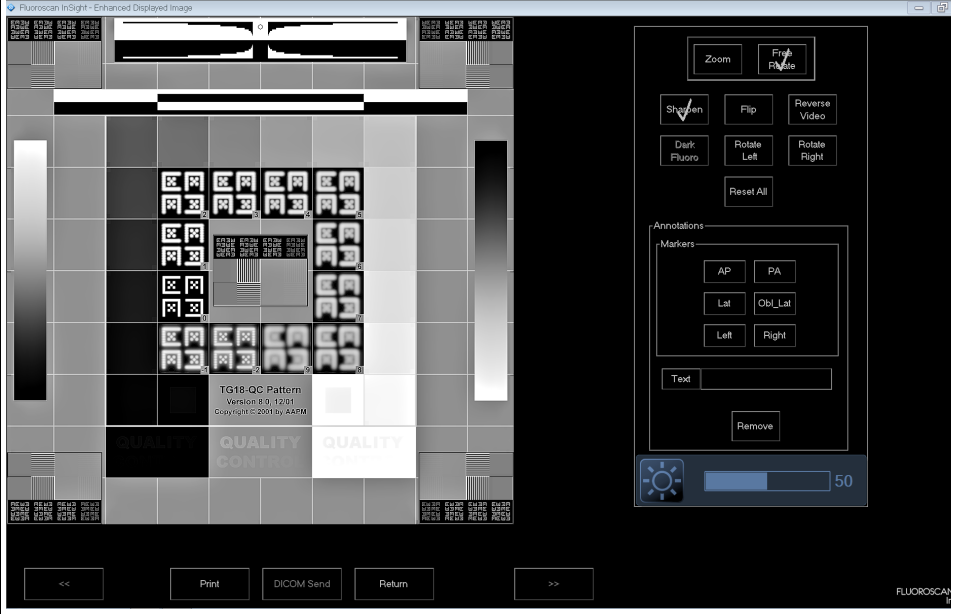
Function	Description
<b>View Logs</b>	View, print, export and in some cases edit various log files the application maintains.
<b>View DICOM Queue</b>	<i>Present if the DICOM Send option is installed.</i> View status of DICOM Send requests, and retry or delete selected requests. <a href="#">Section 16.11 View DICOM Queue Window</a> on Page 86
<b>Print DAP Report</b>	Display and print the Dose Area Product report.  <i>Click DICOM Send, on the DAP Report display screen, to send the DAP Report to a DICOM destination. Include DAP Report must be selected to include the DAP Report with sent images. Otherwise, only the image will be sent.</i>



Table 29 Tools Menu (Continued)

Function	Description
<b>Update Patient Information</b>	Administrators can update patient information for a selected patient study. <a href="#">Section 16.6.1 Update Patient Study Information Window</a> on Page 76
<b>Worklist Entry</b>	Allows configuration of a Worklist without a server connection ( <a href="#">Section 16.9 Worklist Entry</a> on Page 84).
<b>Delete Images</b>	Administrators can delete selected images from the system. <a href="#">Section 16.10 Delete Images Window</a> on Page 84
<b>Import</b>	Import selected images into the system from removable media. <a href="#">Section 16.8 Import Images Window</a> on Page 82
<b>Export</b>	Export selected images from the system to removable media ( <a href="#">Table 46</a> ).
<b>System Backup</b>	Backup system configuration and calibration data to external media.
<b>System Recover</b>	Administrators can restore system configuration and calibration data from external media.
<b>Install Options</b>	Administrators can install application software options.
<b>Service Tools — SMPTE Pattern</b>	Administrators can open a test pattern to check monitor performance and quality. 

## 16.3 X-ray Head Control Panel

Table 30 X-ray Head Control Panel










Symbol	Label	Function
	<b>Save</b>	Saves selected images or cine loop to the record of the patient. If the number of stored images or minutes of cine loop exceeds the storage limit, a message displays.
	<b>Rotate</b>	Rotates the image clockwise or counterclockwise. Press once to rotate 10 degrees. Hold for continuous rotation.
	<b>B/C</b>	Allows adjustment of image brightness and contrast.
	<b>X-ray</b>	Acquires an X-ray exposure. Press switch once to actuate X-rays. A yellow indicator light located on top of the monitor shows that X-rays are being produced.
	<b>Laser</b>	Turns on the Positional Laser.* *Press and hold the Laser button for 10 seconds to enable the positional laser to stay on. This option will reset when the system is powered off.
	<b>Noise Suppression</b>	Cycles through the Noise suppression settings during image acquisition.

Table 30 X-ray Head Control Panel (Continued)

Symbol	Label	Function
	kV/mA	Increases or decreases technique factors based on selected mode (Table 22 Physician Preferences, Image Acquisition Tab, Section/Field Descriptions on Page 47).  Pressing both the up and down power buttons at the same time returns the system to Auto Power mode.
	Mode	Acquisition Mode Selection cycles through: <b>Continuous</b> – Displays continuous images when X-rays are actuated. <b>Snapshot</b> – Captures and displays one image when X-rays are actuated. <b>Cine Record</b> – Gathers all images acquired into a cine loop. Continuous and/or Snapshot mode may be disabled (Section 15.5 Physician Preferences on Page 46).

## 16.4 Image Acquisition Session

### 16.4.1 Select or Enter Patient Window

Available from Main Screen by clicking **Perform**, from the Image Acquisition screen by clicking **Update Patient**, and from the Review screen during an image acquisition session by clicking **Update Patient**.

If patient information is not entered prior to acquiring images the images will be associated with a temporary patient record (Temp Temp).

**Figure 30 Select or Enter Patient Window**

**Table 31 Select or Enter Patient Window, Section/Field Descriptions**

Section/Field	Function
<b>Patient Information</b>	Identifies the current patient. Data is either entered by the user or filled in when a patient is selected from the “Select Patient from ” selection list. Click <b>Clear All</b> to clear Patient Information fields.
<b>Physician's Preferences</b>	Selection button and dropdown selection list of physicians registered on the system.
<b>Visiting Physician</b>	Selection button and entry fields for physician's name to be used when a physician is not registered on the system.

**Table 32 Select or Enter Patient Window, Button Functions**

Button	Function
<b>Clear All</b>	Clears Patient Information fields
<b>Perform</b>	Displays the <b>Image Acquisition</b> screen
<b>Review</b>	Displays the <b>Review</b> screen
<b>Save To Worklist</b>	Manually add Worklist entry for this patient.

Table 32 Select or Enter Patient Window, Button Functions

Button	Function
End Session	Terminates the entry of Patient Information and leaves the <b>Select or Enter Patient</b> screen
Apply Changes	Enters changes without leaving the <b>Select or Enter Patient</b> screen
Cancel	Cancel the entry of Patient Information without leaving <b>Select or Enter Patient</b> screen

## 16.4.2 Image Acquisition Screen

Figure 31 Image Acquisition Screen

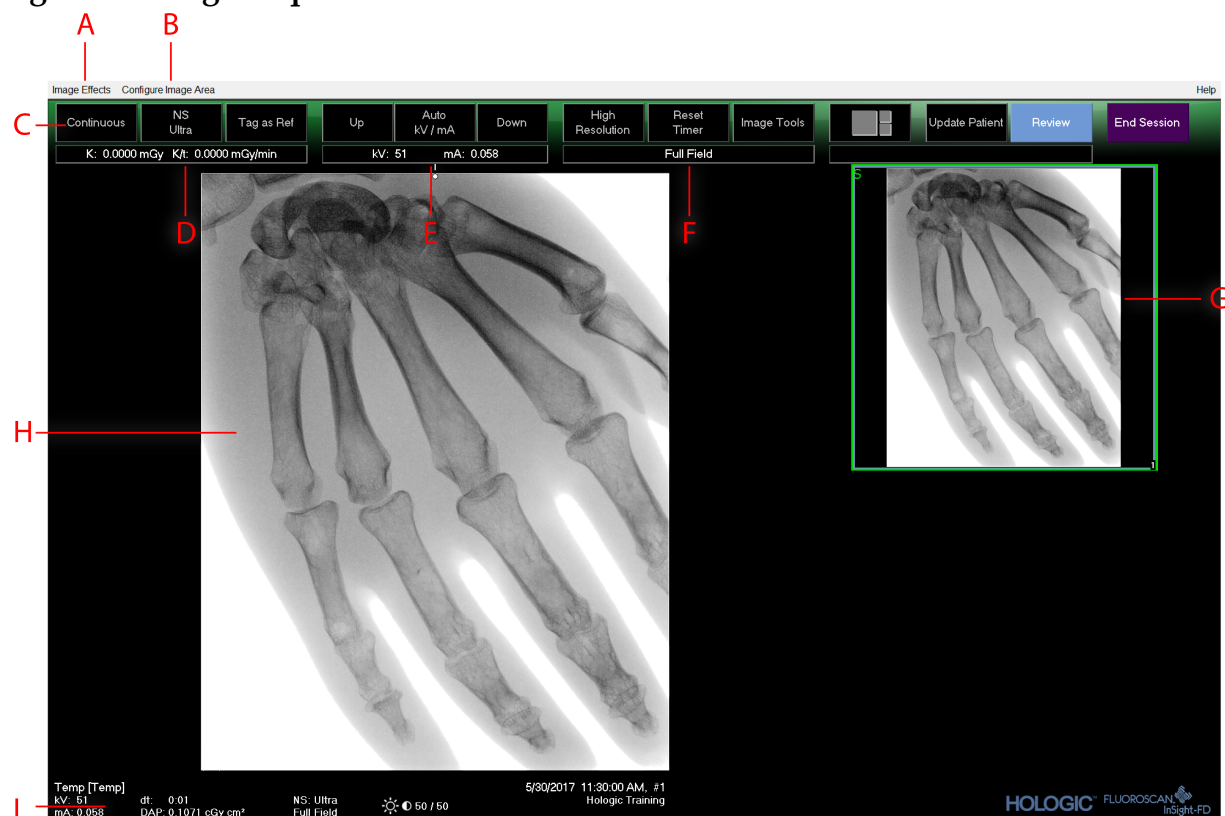


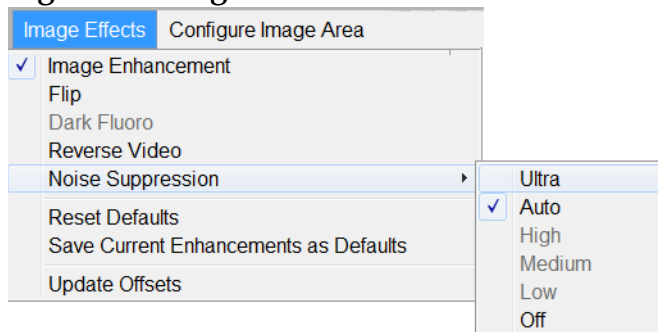
Table 33 Image Acquisition Screen

A	Image Effects Menu ( <a href="#">Table 34</a> )
B	Configure Image Area Menu ( <a href="#">Table 36</a> )
C	Function Buttons ( <a href="#">Table 37</a> )
D	Displays AKR and cumulative air kerma while the X-ray tube is active. Air kerma is calculated at 2 cm above the entrance to the CMOS detector.
E	Displays current power settings.

**Table 33 Image Acquisition Screen (Continued)**

<b>F</b>	Displays collimation mode. Limited Field magnifies a small area. Full field displays a large area. You can cycle through fields by moving the collimation switch. The collimation switch is underneath the X-ray head ( <a href="#">Section 11 System Components</a> on Page 19).
<b>G</b>	Filmstrip/Tools Area ( <a href="#">Table 38</a> ) for Tool Set description.
<b>H</b>	Image Area*
<b>I</b>	Displays cumulative DAP

\* When the X-ray light is on and x-rays are being generated, the displayed image is the live fluoroscopic image. When the X-ray has terminated, the image becomes the last image hold except when cine mode is active.

**Figure 32 Image Effects Menu****Table 34 Image Effects Menu**

Function	Description
<b>Image Enhancement*</b>	Images enhanced according to edge and sharpening configurations set in the Image Enhancement field in <a href="#">Table 44</a> .
<b>Flip*</b>	Images are flipped before being viewed by the user.
<b>Dark Fluoro*</b>	Images have their white image pixels changed to black.
<b>Reverse Video*</b>	Images are changed to a negative (blacks go to white; whites go to black).
<b>Noise Suppression</b>	Selects noise suppression level. Selections are Ultra, Auto, High, Medium, Low and Off. See <a href="#">Section 15.5 Physician Preferences</a> on Page 46 for default setting.
<b>Reset Defaults</b>	Resets the image enhancements, flip, dark fluoro, reverse video, and noise suppression settings to the default settings specified by the current physician's preferences settings, or the system default preferences settings in the event of a visiting physician.

Table 34 Image Effects Menu (Continued)

Function	Description
<b>Save Current Enhancements as Defaults</b>	<i>Enabled if the selected physician is registered on the system.</i> Saves the current image effect settings as the selected physician's preference settings.
<b>Update Offsets</b>	Updates the offsets for Flat Field correction.

\* May be disabled or initially checked or unchecked. (Section 15.5 *Physician Preferences* on Page 46)

### 16.4.3 Filmstrip Symbols

The following symbols appear on a filmstrip/thumbnail image in InSight software.

Figure 33 Filmstrip Symbols

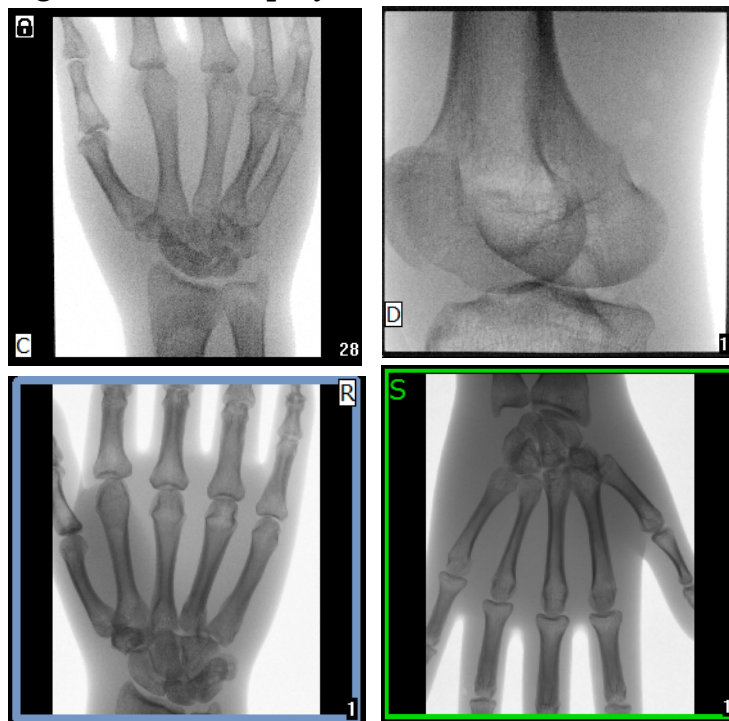



Table 35 Filmstrip Symbols

Indicator	Identifies
C	Cine Loop
D	DICOM Storage Commit
R	Reference Image
S	Saved (identified by green outline around the image)
	Locked image (cannot be deleted)

\*The lock icon is visible from the Review screen, and selecting the box under lock icon column. The study and images in that study will become locked.

Figure 34 Configure Image Area Menu

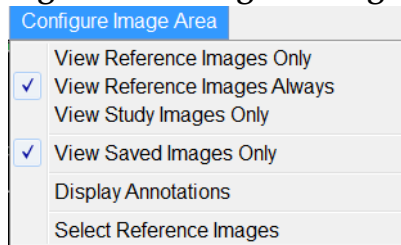


Table 36 Configure Image Area Menu

Function	Description
<b>View Reference Images Only</b>	Only images tagged as reference images are displayed in the filmstrip. This includes images tagged as reference during the current session and/or reference images selected from previous studies for the current patient.
<b>View Reference Images Always</b>	Images tagged as reference always display at the top of the filmstrip followed by reference images selected from previous studies for the current patient, followed by non-reference images acquired in the current session in reverse order.
<b>View Study Images Only</b>	Only images (reference and non-reference) acquired in the current session are displayed in the filmstrip.
<b>View Saved Images</b>	Select View Saved Images from the Configure System Images Menu to display only saved images in the Filmstrip.
<b>Display Annotations</b>	Displays annotations on the image displaying in the live image area.



Table 36 Configure Image Area Menu

Function	Description
<b>Select Reference Images</b>	Displays the Select Reference Images window allowing users to select images from any current patient study residing on the system. Selected images are put into the filmstrip following any reference images acquired during the current session unless View Study Images Only is checked.

Figure 35 Image Acquisition Screen Buttons



Table 37 Image Acquisition Screen, Button Functions



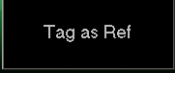

Button	Image	Function
<b>Acquisition Mode Selection</b>		Cycles through: <b>Continuous</b> — Displays continuous images when X-rays are actuated. <b>Snapshot</b> — Captures and displays one image when X-rays are actuated. <b>Cine Record</b> — Gathers all images acquired into a cine loop. Continuous and/or Snapshot mode may be disabled ( <a href="#">Section 15.5 Physician Preferences</a> on Page 46).
<b>NS (Noise Suppression)</b>		Cycles through the levels selected during configuration. See <a href="#">Table 20 Physician Preferences, Section/Field Descriptions</a> on Page 46. Select Ultra to acquire images for very still anatomy. Image processing for Ultra level imaging averages frames at High noise suppression.
<b>Tag as Ref</b>		Marks the image as a reference image for the current session or unmarks a marked image.
<b>Up</b>		Increases the kV and/or mA incrementally by one.

Table 37 Image Acquisition Screen, Button Functions (Continued)



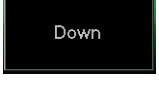


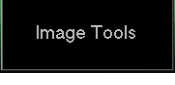
Button	Image	Function
<b>X-ray Power Adjustment Selection</b> Auto kV/mA Auto IQ kV/mA Manual kV/mA Manual kV Manual mA Low Dose		Cycles through: <b>Auto Modes</b> <b>Auto kV/mA</b> — automatically adjusts kV/mA. <b>Auto IQ kV/mA</b> — automatically adjusts kV/mA. Select Auto IQ mode to acquire an enhanced image with improved clarity and less noise. Using Auto IQ mode increases the X-ray dose to the patient. Use Auto IQ when enhanced clarity is required in accordance with ALARA. <b>Low Dose Modes</b> <b>Low Dose</b> — automatically adjusts kV/mA. Select Low Dose mode to acquire images at a lower dose but with increased susceptibility to motion blur. <b>Manual Modes</b> <b>Manual kV/mA</b> — allows the user to manually increase or decrease kV/mA when simultaneous kV/mA* is enabled. <b>Manual kV</b> — allows the user to manually increase or decrease the kV when simultaneous kV/mA* is disabled. <b>Manual mA</b> — allows the user to manually increase or decrease the mA when simultaneous kV/mA* is disabled. *See <a href="#">Section 15.5 Physician Preferences</a> on Page 46 for enabling or disabling simultaneous kV/mA.
<b>Up</b>		Increases the kV and/or mA incrementally by one.
<b>Down</b>		Decreases the kV and/or mA incrementally by one.
<b>Resolution Mode</b>		Click the Resolution Mode button to toggle between High Resolution Mode* and Standard Resolution. *High-Resolution Mode captures more detail at a higher dose than Standard-Resolution Mode but is more susceptible to motion blur. Use the Zoom tool to view fine detail in High Resolution images.
<b>Reset Timer</b>		Resets the X-ray warning timer to zero and turns off the audible alarm.
<b>Image Tools</b>		Shows or hides the tool set in the Filmstrip/Tools area.

Table 37 Image Acquisition Screen, Button Functions (Continued)






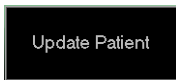



Button	Image	Function
Format Toggle		Selects current image size and number of thumbnail images that display in the filmstrip area.
		 one filmstrip image.
		 two filmstrip images.
		 three filmstrip images.
		 four filmstrip images.
Update Patient		Returns to the Select or Enter Patient window.
Review		Displays the Review Images screen.
End Session		Ends the current patient's acquisition session. Returns to the main screen.

Table 38 Tool Set

Button	Function
Zoom	Magnifies the current image two times. The magnified image can be panned by dragging with the mouse or touchscreen to see a different area of the image. <b>Pinch to Zoom</b> allows use of the touchscreen to magnify and contract the image — pinching outwards enables the zoom while pinching inwards contracts the image to normal size.
Free Rotate	Allows image to be freely rotated using the mouse or touch screen.
Enhance *	Applies/removes image enhancement to/from the image according to Image Enhancement settings selected in <a href="#">Table 38</a> .
Flip *	Flips/unflips the image horizontally about the center.
Reverse Video *	Applies/removes reverse video (blacks go to white; whites go to black) to/from the image.

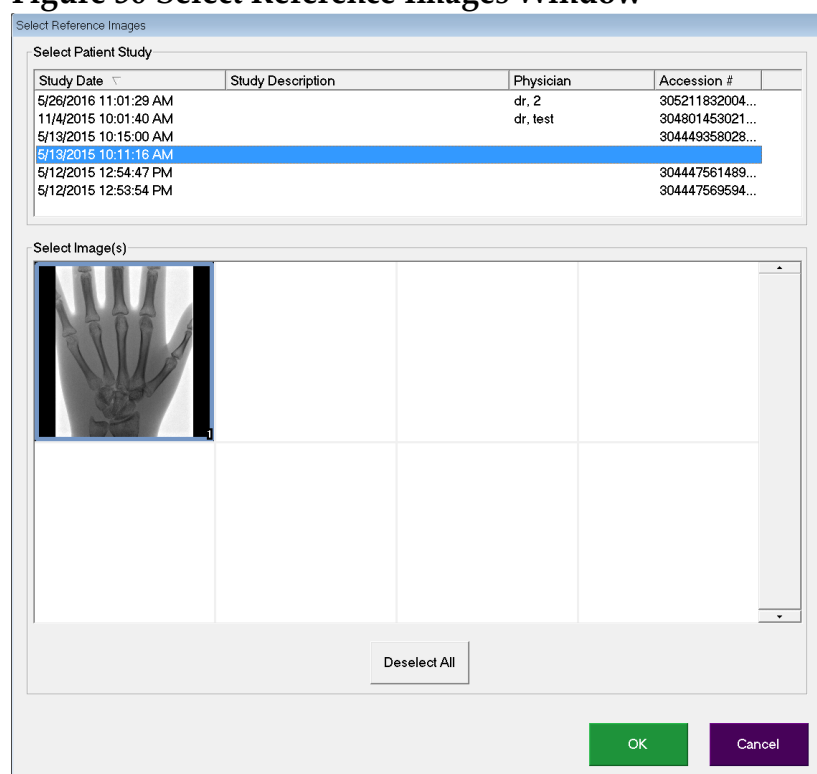
Table 38 Tool Set (Continued)

Button	Function
<b>Dark Fluoro *</b>	Applies/removes dark fluoro (white image pixels change to black) to the image.
<b>Rotate Left</b>	Rotates the image in 10 degrees increments counterclockwise.
<b>Rotate Right</b>	Rotates the image in 10 degrees increments clockwise.
<b>Reset All</b>	Resets all image processing on the image to the last saved state of the image.
<b>Annotations</b>	<p>Contains function buttons and a field that allows the user to add markers or text to the image or remove selected markers or text from the image.</p> <p>Annotations can be moved and/or removed using the mouse or touch screen.</p> <p>To remove an annotation, select the annotation, click <b>Delete</b>.</p> <p>Annotations include: AP, PA, Lat, Obl_Lat, Left, Right, Text (Places the text in the text edit box on the image).</p>
<b>Brightness/Contrast</b>	<p>Allows adjustment of brightness and contrast of the selected image.</p> <div style="display: flex; justify-content: space-around; align-items: center;">  </div>

\*This button may be configured on, off, or disabled ([Section 15.5 Physician Preferences](#) on Page 46).

#### 16.4.4 Select Reference Images Window

Available from the **Image Acquisition** screen by selecting **Select Reference Images** from the **Configure Image Area** Menu.

**Figure 36 Select Reference Images Window****Table 39 Select Reference Images Window, Section Descriptions**

Section	Description
<b>Select Patient Study</b>	Selection list of prior studies for the current patient stored on the system. The selection list can be sorted on any column by clicking in the respective column label. The entry field label in the Find section changes to correspond to the selected sort column.
<b>Select Image(s)</b>	A selection list of thumbnail images contained in the selected patient/study file. Selected images are highlighted. Multiple images can be selected. All images can be selected/unselected by clicking <b>Select All</b> or <b>Deselect All</b> . A scroll bar is displayed if the filmstrip layout does not show all images.

**Table 40 Select Reference Images Window, Button Functions**

Button	Function
<b>Select All/ Deselect All</b>	Selects or deselects all images in the image selection list.

**Table 40** Select Reference Images Window, Button Functions

Button	Function
OK	Returns all selected images to the Image Acquisition screen's filmstrip unless View Study Images Only is checked in the Configure Image Area Menu.
Cancel	Closes the window without returning any images to the Image Acquisition screen.

## 16.5 Review Images Session

### 16.5.1 Select Study for Review Window

Available from Main Screen by clicking **Review** and from the Review screen during a review session by clicking **Select Patient**.



**Note**


*On a wide-screen monitor, when a single study is selected, images appear top to bottom in a single column on the right side of the monitor screen.*

**Figure 37** Study for Review

Table 41 Select Study for Review Window, Section/Field Descriptions

Section/Field	Description
<b>Search For</b>	Search criteria entry fields. To use Start Study and/or End Study Dates as a search criteria, the check box must be checked. The respective check box can be checked by clicking in the box, typing a date in the date field, or selecting a date from the calendar page that appears when clicking the down arrow.
<b>Select Physician</b>	Selection button and dropdown selection list of physicians registered on the system.
<b>Enter Physician</b>	Selection button and two entry fields for physician's name. Use when a physician's name is not registered on the system.
<b>Select Patient Studies for Review</b>	Selection list of all patient/study records on the system. Selection list can be filtered by completing one or more fields in the "Search For" section and clicking <b>Update List</b> . The selection list can be sorted on any column by clicking in the respective column label. One or more studies can be selected.

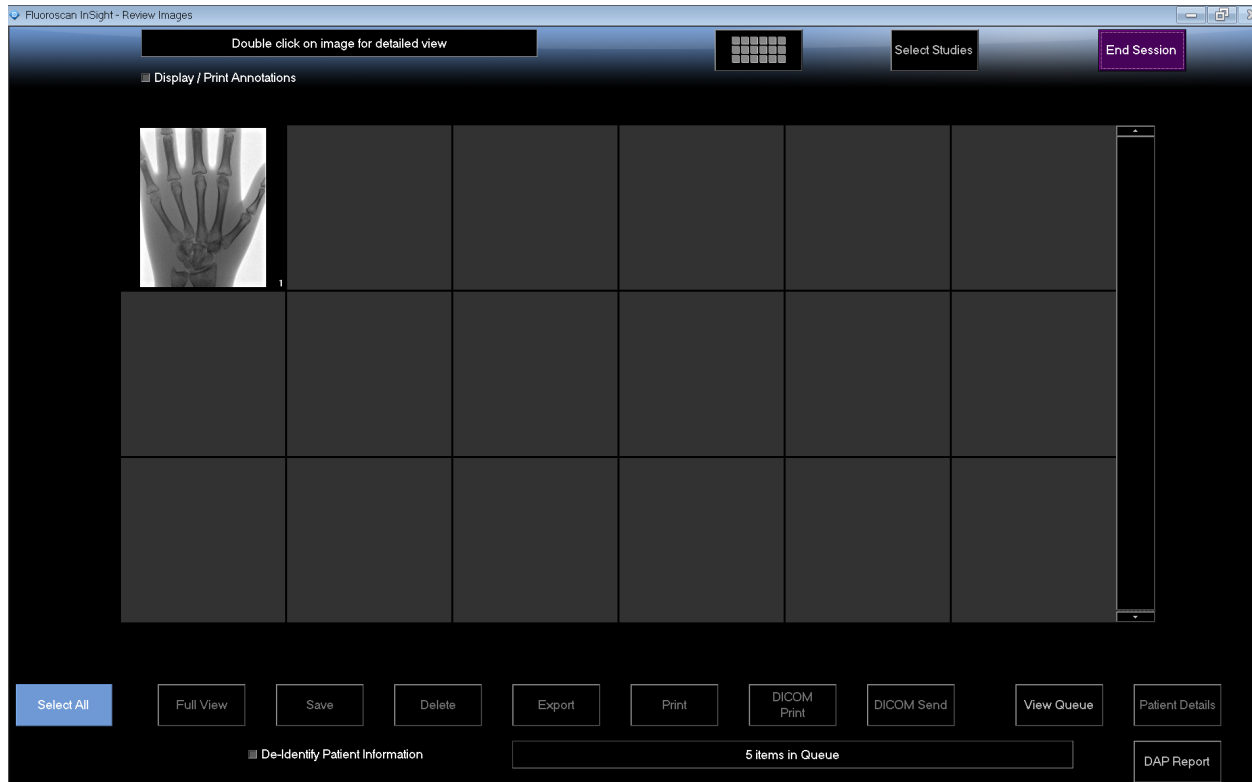
Table 42 Select Study for Review Window, Button Functions

Button	Function
<b>Clear All</b>	Clears all entries in the <i>Search For</i> section.
<b>Update List</b>	Updates the <i>Select Patient Studies for Review</i> selection list using criteria contained in the <i>Search For</i> section to limit the list. If all <i>Search For</i> parameters are empty, a list of all studies on the system is retrieved.
<b>DAP Report</b>	Displays the DAP report for the selected patient.  Click <b>DICOM Send</b> , on the DAP Report display screen, to send the DAP Report to a DICOM destination. Include DAP Report must be selected to include the DAP Report with sent images. Otherwise, only the image will be sent.
<b>Patient Details</b>	Enabled when only one study is selected. Displays patient information.
<b>Review</b>	Displays the Review screen. <i>At least one study must be selected to enable the Review button.</i>
<b>End Session</b>	Terminates the review session.

## 16.5.2 Review Screen

Available from the Select Study for Review window, and from the Image Acquisition screen by clicking **Review**.

**Figure 38 Review Images Screen**



**Table 43 Review Screen, Button Functions**




Button	Function
<b>Display Mode Selection</b>	Determine how images are displayed.
	 Displays one row of two images.
	 Displays two rows of four images.
	 Displays three rows of six images.
<b>Select Studies</b>	Selects studies for review.
<b>Display/Print Annotations</b>	Displays or prints annotations on the displayed image.
<b>Display Saved Images Only</b>	Visible only during acquisition session. Displays only saved images.



Table 43 Review Screen, Button Functions (Continued)

Button	Function
<b>Select/Deselect All</b>	Toggles between: <b>Select All</b> - Selects all unselected images. <b>Deselect All</b> - Unselects all selected images.
<b>Full View</b>	Displays the selected image in the Enhanced Displayed Image screen ( <a href="#">Section 16.5.3 Enhanced Displayed Image Screen</a> on Page 75)
<b>Save</b>	Saves selected images or cine loop to the patient's record. If the number of stored images or minutes of cine loop exceed the storage limit, a message is displayed.
<b>Delete</b>	Deletes the selected images. If the system setting <i>Query on Delete</i> is enabled, the user is asked to confirm the deletion. Click <b>Yes</b> to confirm; <b>No</b> to cancel the deletion.
<b>Export</b>	Copies the selected image(s) or cine loop to removable media. Patient information will be removed from images when <i>De-Identify Patient Information</i> is checked.
<b>Print</b>	Prints the selected image(s) to the local printer. Images will be printed with annotations when <i>Display/Print Annotations</i> is checked. Patient information will be removed from images when <i>De-Identify Patient Information</i> is checked.
<b>DICOM Print</b>	Sends the selected images to a DICOM node printer for printing. Images will be printed with annotations when <i>Display/Print Annotations</i> is checked. Patient information will be removed from images when <i>De-Identify Patient Information</i> is checked.
<b>DICOM Send</b>	Sends the selected image(s) to a DICOM Send node. Patient information will be removed from images when <i>De-Identify Patient Information</i> is checked.
<b>View Queue</b>	Displays the status of all DICOM Send requests ( <a href="#">Section 16.11 View DICOM Queue Window</a> on Page 86)
<b>Patient Details</b>	Displays patient information. Click <b>Additional Details</b> to reveal <b>Vista Dialog</b> ( <a href="#">Figure 40</a> ).
<b>DAP Report</b>	Displays the DAP report for the selected patient. <b>Note:</b> Click DICOM Send, on the DAP Report display screen, to send the DAP Report to a DICOM destination.
<b>De-Identify Patient Information</b>	Omits protected patient health information details related to specific patients.

**Table 43 Review Screen, Button Functions (Continued)**

Button	Function
<b>Update Patient / Select Study</b>	In an acquisition session, returns to the Select or Enter Patient window to view or update patient information In a review session, returns to the Select Patient for Review window to select a different patient study.
<b>Perform</b>	Visible only in an acquisition session. Returns to the image acquisition screen.
<b>End Session</b>	Terminates the current session.

**Figure 39 Patient Details**

Patient Details

First Name:

Last Name: q

Patient ID: q

Study Description:

Physician:

Accession #:

Birth Date:

Location:

Date Time: 5/13/2015

Additional Data Close

**Figure 40 VISTA Details**

VISTA Details

Other Patient ID: Procedure Comments:

Ethnic Group: Scheduled Code Value:

Patient Comment: Scheduled Code Scheme:

Pregnancy Status: Scheduled Code Description:

Medical Alerts: Requested Code Value:

History: Requested Code Scheme:

Current Location: Requested Code Description:

AE Title: Image Comments:

Procedure Location: Requesting Service:

Procedure Description: Attending Physician:

Performing Physician: Requesting Physician:

Procedure Date:

Close

### 16.5.3 Enhanced Displayed Image Screen

Available from the Review Images screen by selecting one image and clicking **Full View**, or by double clicking an image.

**Figure 41 Enhanced Displayed Image Screen**

The tool set is identical to the tool set described in [Table 38](#)

**Table 44 Detailed Image Viewing Screen, Button Functions**

Button	Function
<< (Previous Image)	Displays the previous image.
Print	Prints a copy of the image.
Delete	Deletes the image currently being displayed. If the system setting <i>Query on Delete</i> is enabled, the user is asked to confirm the deletion. Click <b>Yes</b> to confirm; <b>No</b> to cancel the deletion.
Return	Returns to the Review screen.
>> (Next Image)	Displays the next image.

## 16.6 Maintaining Patient Study Records

### 16.6.1 Update Patient Study Information Window

Available to administrators from the Tools Menu on the Main Screen.

**Figure 42 Update Patient Study Information Window**

Update Patient/Study Information

Select Patient Study

Find  
Study Date

Last Name	First Name	MI	Patient ID	Sex	DOB	Accession #	Study Description	Study Date	Physician
q			q			3059664036...		6/5/2017 1:20:5...	temp. g
Temp			Temp					5/4/2017 4:46:1...	
Resolution P...	Comparison		1					5/3/2017 3:39:3...	
Temp			Temp			3058736240...		4/20/2017 10:32...	
Low Dose	Comparisons		1					3/9/2017 4:13:4...	
Grid			Temp					3/8/2017 5:28:1...	
Ankle			Temp					3/8/2017 5:22:5...	

Update Patient Information

Patient Last Name

Patient First Name

MI

Patient ID

Accession Number

Female Male

Date of Birth

Month Day Year


Study Description

Update Cancel

**Table 45 Update Patient/Study Information Window, Section Descriptions**

Section	Description
<b>Select Patient Study</b>	Selection list of all patient/study records on the system and a search criteria section (Find). The selection list can be sorted on any column by clicking in the respective column label. The entry field label in the Find section changes to correspond to the selected sort column.
<b>Find</b>	Use to quickly locate a patient/study.
<b>Update Patient Information</b>	Displays information from the selected patient/study record.

**Table 46 Update Patient/Study Information Window, Button Functions**

Button	Function
<b>Update</b>	Updates the patient information on all images in the selected study.  <i>Note The Auto-Accession number is associated with a specific patient. It does not change when patient information is updated.</i>

**Table 46 Update Patient/Study Information Window, Button Functions**

Button	Function
<b>Cancel</b>	Closes the window without updating and returns to the main screen.

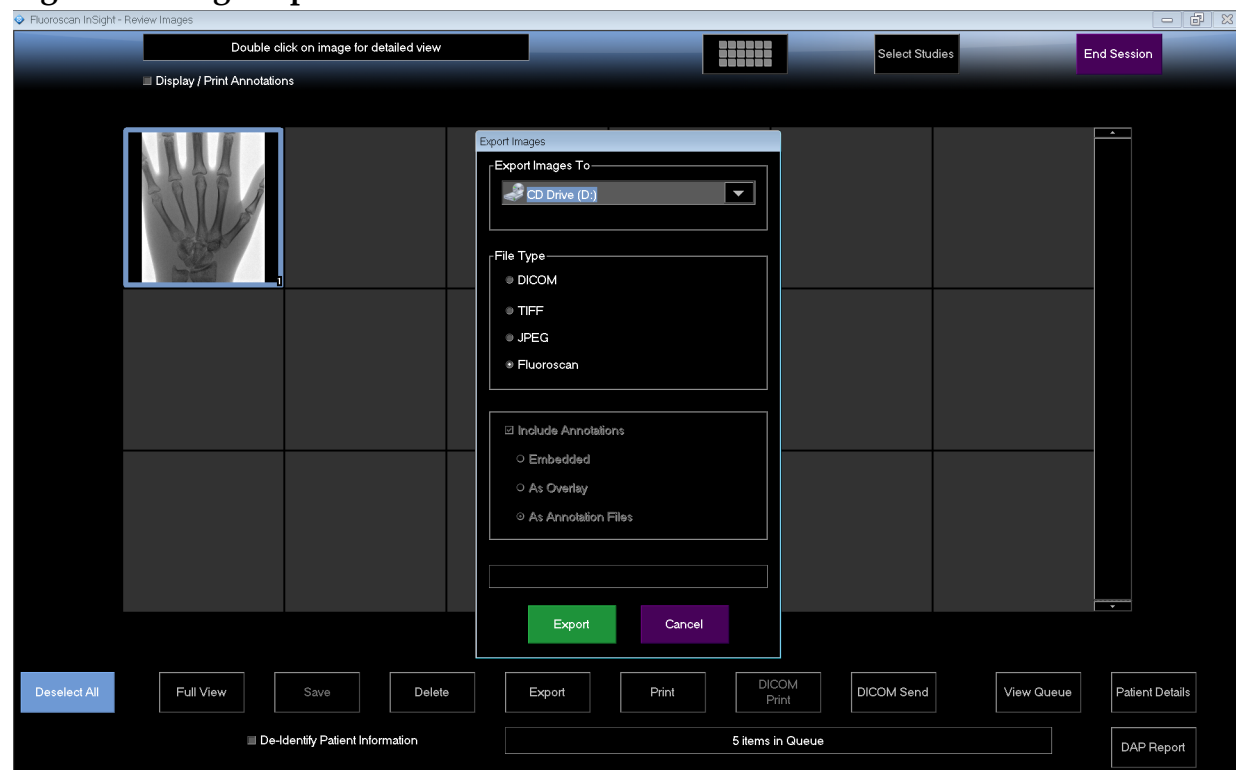
## 16.7 Export Images

Available from the **Tools Menu** on the **Main Screen** and from the **Review Images** Screen.

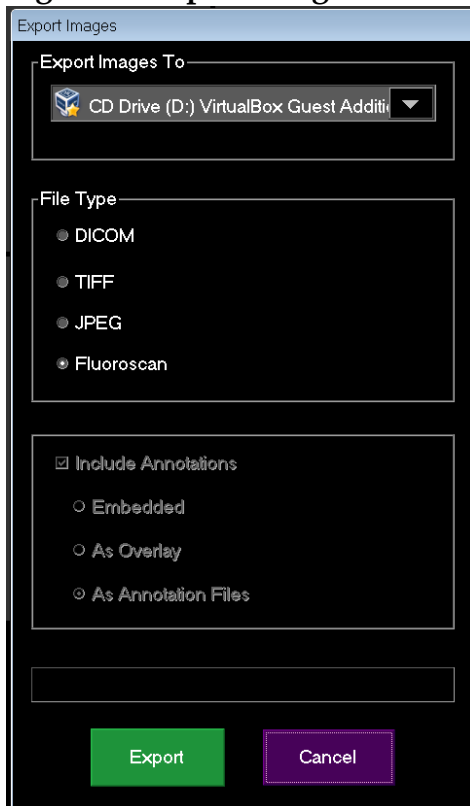
### 16.7.1 Export from Review Images Screen

A USB device may be used for export. Insert a USB device into the USB port of the system before executing the following steps.

1. From the **Review images** Screen (Figure 43), Select images for export.
2. Click **Export** to open the **Export Images** Window (Figure 44).
3. Select the options for export: File Type and/or Annotations
4. Click **Export**.

**Figure 43 Image Export from Review Screen**

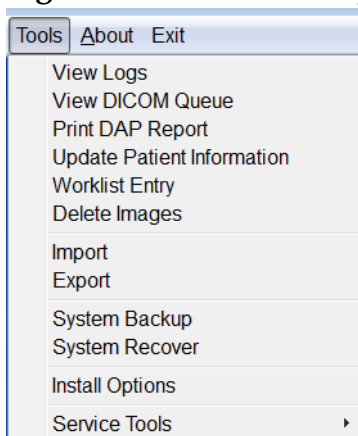
**Figure 44 Export Images Panel**



### 16.7.2 Export from Review Images Screen

1. From the **Tools** Menu (Figure 45), select **Export**.

**Figure 45 Tool Menu Export**



2. Click **Export** to open the **Export Images** Window.
3. In the **Export Images** window (Figure 46), select the studies from which files will be exported.

**Figure 46 Export Images from Tool Menu**

**Export Images**

Export Images To: CD Drive (D:) File Type: ☐ DICOM ☐ TIFF ☐ JPEG ☒ Fluoriscan

Select Patient Study

Last Name	First Name	MI	Patient ID	Physician	Study Date
Grid			Temp		3/8/2017 5:28:11 PM
Ankle			Temp		3/8/2017 5:22:52 PM
Toes			Temp		3/8/2017 5:19:17 PM
Hand			Temp		3/8/2017 5:13:02 PM
Fingers			Temp		3/8/2017 5:04:50 PM
LPMM			Temp		3/8/2017 5:00:46 PM
q			12/2	temp. g	1/27/2017 9:46:20 AM

Select Image(s)

De-Identify Patient Information  
☒ Include Annotations As Annotation Files

**Export** **Cancel**

4. Click **Export** to open the **Export Images** Window.
5. Select the images and options for the export:
  - a. Select the Images for export
  - b. Location to which the files will be exported
  - c. File Type
  - d. De-identify patient information
  - e. Annotations
6. Click **Export**.

**Table 47 Export Window, Section Descriptions**

Section	Description
<b>Export Images to</b>	Selection list of removable media devices currently available to the system. <i>Other Locations</i> allows the user to browse for a folder on the system or network.
<b>File Type</b>	File format selection.

Table 47 Export Window, Section Descriptions (Continued)

Section	Description
<b>Select Patient Study</b>	Selection list of all patient/study records on the system and a search criteria section (Find). The selection list can be sorted on any column by clicking in the respective column label. The entry field label in the Find section changes to correspond to the selected sort column. One or more studies can be selected. When one study is selected, all images in the study display in the Select Image(s) section. When multiple studies are selected, images are not displayed.
<b>Find</b>	Use to quickly locate a patient/study.
<b>Select Image(s)</b>	Images are displayed when <u>one</u> patient/study is selected. Images are not displayed when multiple studies are selected. A selection list of thumbnail images contained in the selected patient/study file. Selected images are highlighted. Multiple images can be selected. All images can be selected/unselected by clicking <b>Select All</b> or <b>Deselect All</b> .
<b>De-Identify Patient Information</b>	When checked, removes patient identification data from images being exported.
<b>Include Annotations</b>	When checked, includes annotations with exported images. Method of inclusion choices are: Embedded - Annotations are embedded into the bitmap image. As Overlay - Annotations are included as a DICOM overlay. As annotation files - Annotations are included as a separate file.

Table 48 Export Window, Button Functions

Button	Function
<b>Patient Details</b>	Enabled when only one image is selected. Displays patient information.
<b>Select All/ Deselect All</b>	Selects or deselects all images in the image selection list.
<b>Export</b>	Exports the selected images to the selected media device in the selected format. When more than one study is selected, copies all images in each study. <i>Images are not deleted from the system.</i>
<b>Cancel</b>	Closes the window without exporting images and returns to the main screen.

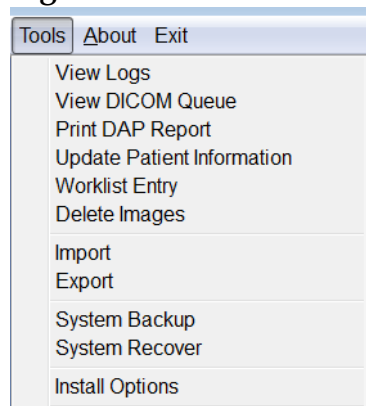


## 16.8 Import Images Window

A USB device may be used for import. Insert a USB device into the USB port of the system before importing images.

Available from **Tools** Menu (Figure 47) on the **Main Screen**.

**Figure 47 Tools Menu**



**Figure 48 Import Images Window**

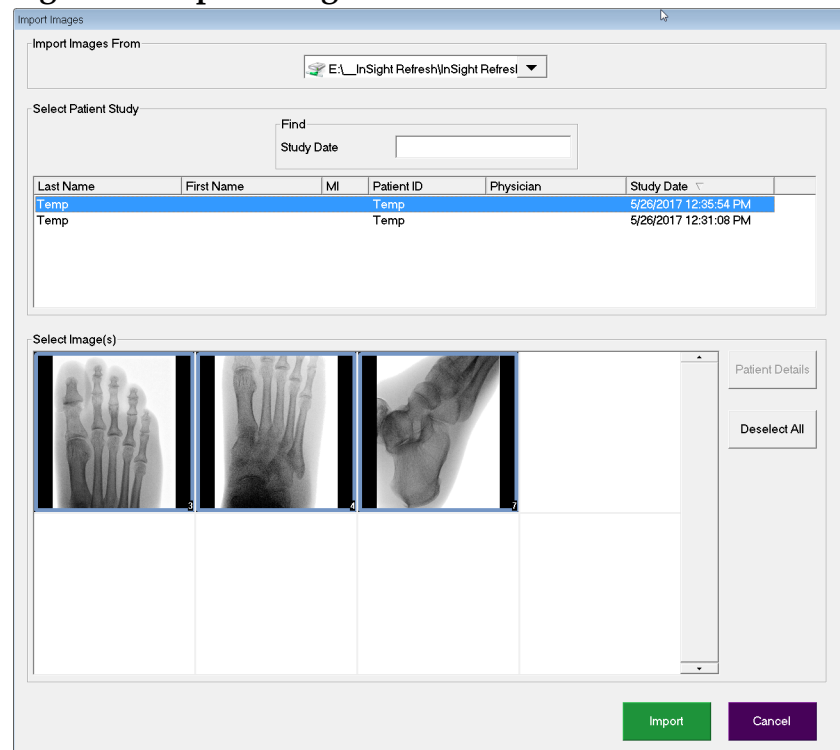


Table 49 Import Window, Section Descriptions

Section	Description
<b>Import Images from</b>	Selection list of removable media devices currently available to the system. <b>Other Locations</b> allows the user to browse for a folder on the system or network.
<b>Select Patient Study</b>	Selection list of all patient/study records on the selected media and a search criteria section (Find). The selection list can be sorted on any column by clicking in the respective column label. The entry field label in the Find section changes to correspond to the selected sort column. One or more studies can be selected. When one study is selected, all images in the study display in the Select Image(s) section. When multiple studies are selected, images are not displayed.
<b>Find</b>	Use to quickly locate a patient/study.
<b>Select Image(s)</b>	Images are displayed when <u>one</u> patient/study is selected. Images are not displayed when multiple studies are selected. A selection list of thumbnail images contained in the selected patient/study file. The selected images are highlighted. Multiple images can be selected. All images can be selected/unselected by clicking <b>Select All</b> or <b>Deselect All</b> .

Table 50 Import Window, Button Functions

Button	Function
<b>Patient Details</b>	Enabled when only one image is selected. Displays patient information.
<b>Select All/ Deselect All</b>	Selects or deselects all images in the image selection list.
<b>Import</b>	Imports the selected images into the system.
<b>Cancel</b>	Closes the window without importing images and returns to the main screen.

## 16.9 Worklist Entry

Worklist Entry allows configuration of a Worklist without a server connection.

### 16.9.1 Option 1 Tools Submenu

1. Select **Tools**.
2. Select **Worklist Entry**.
3. Enter **Patient Information**.
4. Click **Add** to enter patient information to **Worklist**.

### 16.9.2 Option 2 Patient Information Screen

1. After patient data has been entered on the Patient Information screen, select **Save to Worklist** ([Section 16.4.1 Select or Enter Patient Window](#) on Page 60).
2. Click **OK**.

## 16.10 Delete Images Window

Available to administrators from the Tools Menu on the **Main Screen**.

**Figure 49 Delete Images**

Select Patient Study

Find  
Study Date

	Last Name	First Name	MI	Patient ID	Physician	Study Date
<input type="checkbox"/>	q			q		5/18/2017 2:05:45 PM
<input type="checkbox"/>	q			q		5/18/2017 2:03:49 PM
<input type="checkbox"/>	q			q		5/16/2017 1:43:13 PM
<input type="checkbox"/>	d	d	d	d		4/18/2017 4:57:42 PM
<input type="checkbox"/>	Temp			Temp		3/21/2017 9:49:02 AM
<input type="checkbox"/>	Temp			Temp		3/13/2017 3:38:02 PM
<input type="checkbox"/>	Temp			Temp		3/8/2017 11:10:55 PM

Select Image(s)

Select a study to view images

Delete Cancel

**Figure 50 Image Selected for Deletion**

The screenshot shows the 'Delete Images' application window. It features a 'Select Patient Study' section with a search bar and a table of patient records. One record is selected, and its corresponding images are displayed in the 'Select Image(s)' section. A single image thumbnail is visible and highlighted. Navigation buttons like 'Delete' and 'Cancel' are at the bottom.

**Table 51 Delete Images Window, Section Descriptions**

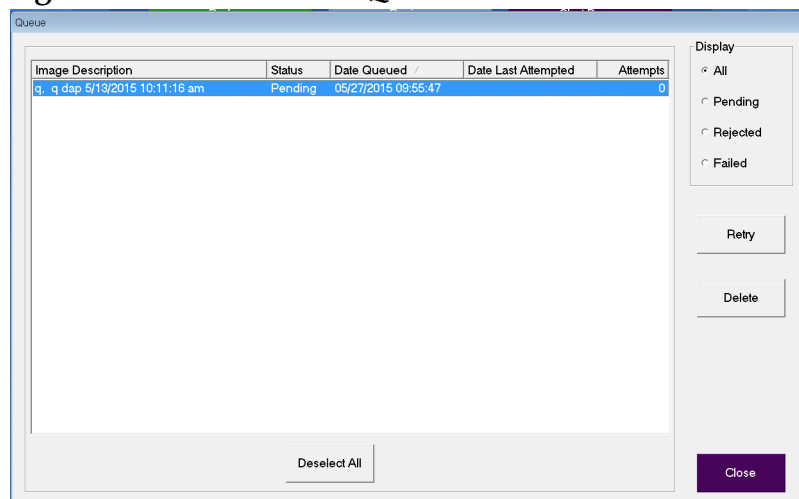
Section	Description
<b>Select Patient Study</b>	Selection list of all patient/study records on the system and a search criteria section (Find). The selection list can be sorted on any column by clicking in the respective column label. The entry field label in the Find section changes to correspond to the selected sort column. One or more studies can be selected. When one study is selected, all images in the study display in the Select Image(s) section. When multiple studies are selected, images are not displayed.
<b>Find</b>	Use to quickly locate a patient/study.
<b>Select Image(s)</b>	Images are displayed when <u>one</u> patient/study is selected. Images are not displayed when multiple studies are selected. A selection list of thumbnail images contained in the selected patient/study file. Selected images are highlighted. Multiple images can be selected. All images can be selected/unselected by clicking <b>Select All</b> or <b>Deselect All</b> .

**Table 52 Delete Images Window, Button Functions**

Button	Function
<b>Patient Details</b>	Enabled when only one image is selected. Displays patient information.
<b>Select All/ Deselect All</b>	Selects or deselects all images in the image selection list.
<b>Delete</b>	Deletes the images selected in the image selection list from the InSight FD system. When more than one study is selected, deletes all images in each study. If the system setting Query on Delete is enabled, the user is asked to confirm the deletion. Click Yes to confirm; No to cancel the deletion.
<b>Cancel</b>	Closes the window without deleting images and returns to the main screen.

## 16.11 View DICOM Queue Window

Available from the Tools Menu and from the Review Images screen.

**Figure 51 View DICOM Queue****Table 53 Queue Window, Section Description and Button Functions**

Section/Button	Description/Function
<b>DICOM Queue List</b>	Selection list of queue request information that can be filtered.
<b>Display</b>	Filters the selection list depending on the selected radio button.
<b>Select All/ Deselect All</b>	Selects or deselects all DICOM requests listed in the Queue List.

---

**Table 53 Queue Window, Section Description and Button Functions**

<b>Section/Button</b>	<b>Description/Function</b>
<b>Delete</b>	Deletes the selected DICOM request(s).
<b>Retry</b>	System tries to send the selected DICOM request(s) again.
<b>OK</b>	Closes the Queue window and returns to the previous screen (Main Screen or Review Images screen).

## 17 System Maintenance

### 17.1 System Backup

Any user can backup system configuration and calibration data to a selected removable media device by selecting System Backup from the Tools Menu on the Main Screen.

### 17.2 System Recover

Administrators can restore system configuration and calibration data from a selected removable media device by selecting System Recover from the Tools Menu on the Main Screen.

### 17.3 Cleaning

Exterior surfaces of the InSight FD Mini C-arm should be cleaned once a week and anytime after a surface has become soiled. Clean exterior surfaces of the cabinet, the flex-arm and the C-arm with a soft cloth or disposable lint-free tissue moistened with water, isopropanol or methanol. Disinfect using a 10% bleach solution. Wipe surfaces, do not scrub. A commercial glass cleaner may be used to clean the monitor's touch screen.



**Warning:** *Disconnect the equipment from the AC Power Source before applying any cleaners or disinfectants to the system.*

---

#### 17.3.1 Recommended Disinfectants

**Table 54** Recommended Wipes

Cleaner
PDI Super Sani-Cloth Germicidal Disposable Wipes
PDI Sani-Cloth plus Germicidal Disposable Cloth

Table 55 Recommended Chemicals

Base Type	Typical Products
Chlorine (maximum 10% solution)	Clorox, Novalsan
Formaldehyde	Formaldehyde solution 37%, Vinco Formaldegen
Glutaraldehyde	Aldacide 200, Lysofume, Wavicide
Phenol family	Lysol I.C., Beaucoup, Magna Clean, Tek-Trol
Alcohol	Cavicide, Isopropyl Alcohol, Medicide
Oxidizing	Hydrogen Peroxide 3% Solution, Lifegard Series
Quaternary Ammonium	Roccal-D, Bacto-Sep, Parvosol
Soap and Water	

## 17.4 Preventive Maintenance

Hologic recommends that preventative maintenance be performed by authorized service personnel at least once per year.

## 17.5 Troubleshooting

For assistance with the proper operation of your equipment, contact Hologic Customer Support.

Toll Free in USA: +1.800.321.4659

Email: [SkeletalHealth.Support@hologic.com](mailto:SkeletalHealth.Support@hologic.com)

In Europe, South America, or Asia, contact your local dealer or distributor.

## 17.6 Disposal



Equipment to be disposed in compliance with European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).







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