FLUOROSCAN InSight®-FD

# InSight® FD Mini C-arm User Guide

**MAN-04858 Revision 006**

HOLOGIC®

# InSight® FD

## Mini C-arm

## User Guide

Part Number: MAN-04858
Revision 006
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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In Europe, South America, or Asia, contact your local dealer or distributor.

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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.

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

# 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 what?. 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 user 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 IEC Regulations

InSight FD Mini C-arm Imaging Systems comply with the requirements of IEC 60601-1. The classification of the InSight FD Mini C-arm Imaging Systems under this specification is Class 1, Type B.

The InSight FD Mini C-arm Imaging Systems comply with the following IEC standards:

| | | |
|---|---|---|
| IEC/EN 60601-1 | IEC/EN 60601-1-3 | IEC/EN 60601-2-28 |
| IEC/EN 60601-1-2 | IEC/EN 60825-1 | IEC/EN 60601-2-54 |

## 3.3 Canadian Regulations

The InSight FD Mini C-arm Systems comply with CSA C22.2 No. 601.1

# 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 Accessories

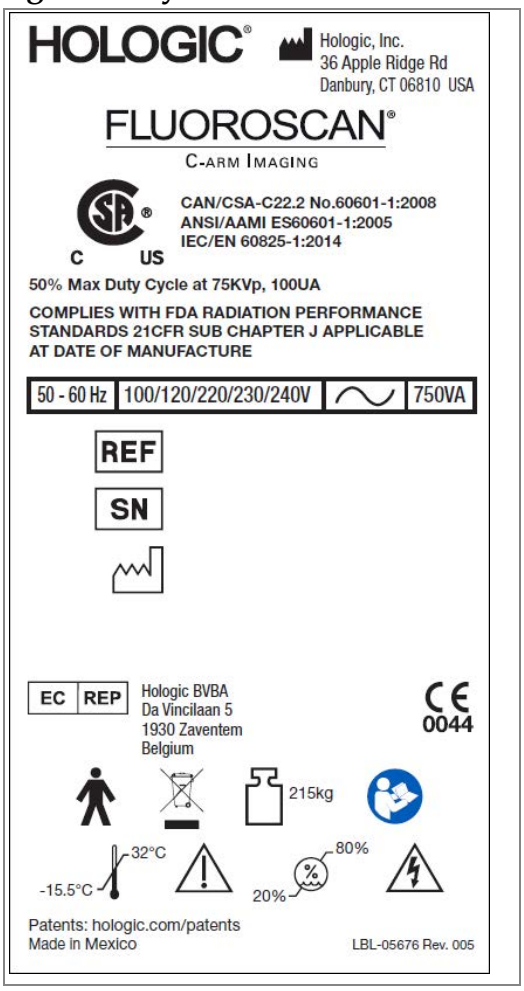
This instrument is supplied with hardware and software accessories that are needed for safe and reliable operation. Additional accessories may be used to perform optional procedures. Do not use any accessories with this instrument other than those approved by Hologic.

# 6 InSight FD System Labels

## 6.1 System Main Label

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

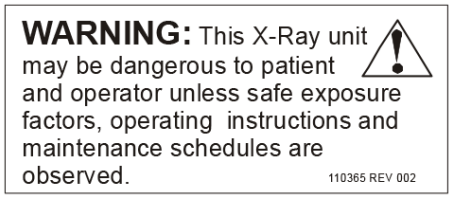
**Figure 2 System Main Label**




## 6.2 X-ray System Warning Label

The X-ray System Warning Label is on the front of the base cabinet below the Computer On/Standby switch.

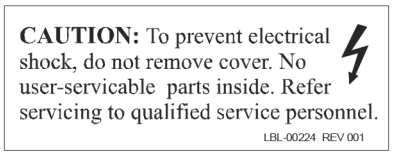
**Figure 3 X-ray System Warning**



## 6.3 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**




## 6.4 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 5 Field of View**

# 7 Symbols

**Table 1 Symbols**

| | | | |
|---|---|---|---|
| | Dangerous voltage | | Attention - Read the Caution or Warning statement that follows |
| | Type B equipment | | X-ray filtration |
| | Time delay fuse | | Protective ground |
| Functional Groun | Functional ground | quipotential Gro | Equipotential ground |
| | USB connector | | Electrostatic sensitive device |

**Table 1 Symbols (Continued)**

| | | | |
|---|---|---|---|
| | WEEE dispose of electrical/ electronic equipment properly | | Computer On/Standby switch |
| | Rear wheels free to move in all directions | | Rear wheels move forward and back only |
| | Rear wheels locked | | Manufacturer name and location |
| | Manufacturing date | | Name and address of authorized representatives |
| | Laser on switch | | X-ray on switch |
| | Store | | Print |
| | Increase or decrease kV/mA | | Rotate image |
| | Cycle through the noise suppression settings | SN | Serial number |
| REF | Part number | V~ | AC Voltage |

# 8 Safety Hazards

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

**Table 2 Safety Hazards**

| Safety Hazard | Cause | Course of Action |
|---|---|---|
| **Radiation Safety** | *This system produces ionizing radiation and may be dangerous to patients and operators unless the safety and operating instructions in this manual are followed.* | 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.<br>Operators should avoid placing their hands or any part of their bodies in the path of the X-ray beam.<br>When making X-ray exposures, place the anatomy close to the CMOS detector for the best image quality and to reduce exposure to radiation.<br>An alarm sounds after every five minutes of accumulated exposure time. |
| **Electrical Safety** | ***Electrical circuits inside the system can cause serious injury or death.***<br>*This system operates on high voltages. High voltages are at the following locations:*<br>*X-ray tube: 75,000 Volts.* | 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.<br>*Unplugging the power cord from the wall is the only way to disconnect main power from this system.* |

**Table 2 Safety Hazards**

| Safety Hazard | Cause | Course of Action |
|---|---|---|
| **Tipping Hazard** | Placing too much weight on the C-arm CMOS detector may cause the system to tip over. The amount of weight that can be supported by the CMOS detector 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. | If weight is to be applied to the C-arm CMOS detector, caution must be used to prevent the device from becoming unstable.<br> *Do not place the full weight of the lower extremity directly on the CMOS detector.* |
| **Imaging Function Loss** | Detector damage from surgical tools (i.e., drills coming into contact with the detector surface) | Do not use the C-arm CMOS detector as a working surface. |
| **Unauthorized Modifications to X-ray Tube** | *Never remove the housing around the X-ray tube or make any changes to the X-ray tube.*<br>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. | Do not make any changes to the X-ray tube. Contact a Hologic Representative to replace the X-ray tube. |

**Table 2 Safety Hazards**

| Safety Hazard | Cause | Course of Action |
|---|---|---|
| **Electrical Fire** | Fire from any source. | 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.<br>Do not touch a system that is on fire. Leave the area. Only use fire extinguishers approved for electrical fires. |
| **Explosion Hazard** | 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). | 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:<br>• Do not turn the system ON or OFF, or unplug it from an AC power receptacle.<br>• Do not operate any other electrically powered equipment.<br>• Evacuate the area immediately. Ventilate the area with fresh air.<br>• Avoid operating any automated (electrically operated) doors or windows.<br>• Contact your local fire department as soon as possible. |
| **Foot Switch Safety** | The foot switch can be damaged by falling objects, being rolled over by the system wheels, and if it is dropped.What does in other ways mean? | Remain aware of the foot switch at all times during operation and transport to avoid these hazards. |

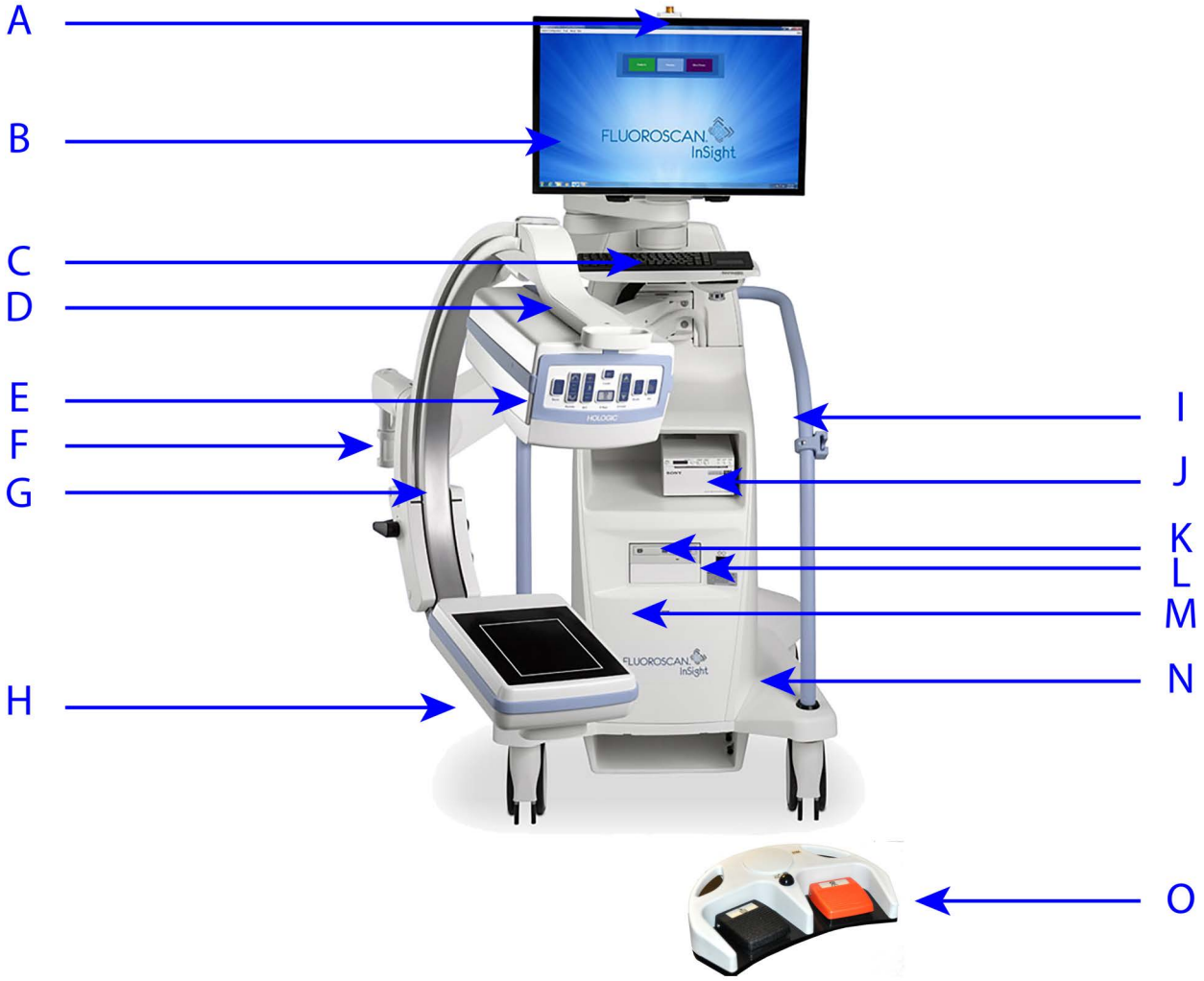
**Table 2 Safety Hazards**

| Safety Hazard | Cause | Course of Action |
|---|---|---|
| **Collision Hazard** | If improperly moved or if the wheel brakes are not used correctly, the system could roll out of control.<br>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. | ***Use caution when moving the system on an incline.***<br>Do not move the system on an incline greater than ten degrees.<br>One person can move the system easily on a level surface.<br>Always lock the wheel brakes before procedures. Never leave the system unattended on an incline greater than five degrees.<br>Always lock the flex arm after changing the position of the C-arm. |
| **Cleaning Safety** | Almost any liquid spilled into electronic equipment automatically becomes a conductor of electricity. | 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.<br>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.<br>For additional detail on disinfectants, see Section 14.3.1 *Recommended Disinfectants* on Page 74. |

**Table 2 Safety Hazards**

| Safety Hazard | Cause | Course of Action |
|---|---|---|
| **Device Safety** | ***Injury could result if unapproved devices are connected to the system.*** Certain devices were tested for use with the InSight FD System, use only these or compatible devices.List of these devices? | 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. | If a strong electrosurgical surge causes the system to malfunctions:<br>Turn the system off<br>Wait five seconds.<br>Turn the system on.<br>If the problem persists after resetting the system twice, request service. |

# 9 System Components




| | | | |
|---|---|---|---|
| **A** | X-ray ON light | **I** | C-arm retainer |
| **B** | Touch screen monitor | **J** | Image printer shelf |
| **C** | Keyboard with integrated pointing device | **K** | CD/DVD RW recorder |
| **D** | X-ray head | **L** | Computer On/Standby switch |
| **E** | Collimation switch | **M** | USB port (behind the CMOS detector) |
| **F** | Flex-arm | **N** | Footswitch shelf |
| **G** | C-arm | **O** | Wireless Footswitch |
| **H** | CMOS Detector | | |

# 10 Controls and Indicators

## 10.1 X-ray Head Control Panel

**Table 3 X-ray Head Control Panel**

| Symbol | Label | Function |
|---|---|---|
| | **Save** | 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. |
| | **Rotate** | Rotates the image 10 degrees clockwise or counterclockwise. |
| | **B/C** | Allows adjustment of image brightness and contrast. |
| | **X-ray** | 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. |
| | **Laser** | Turns on the Positional Laser. |
| | **Noise Suppression** | Cycles through the Noise suppression settings during image acquisition. |

**Table 3 X-ray Head Control Panel**

| Symbol | Label | Function |
|---|---|---|
| | **kV/mA** | Increases or decreases technique factors based on selected mode (Table 13 Worklist Configuration, Section Descriptions on Page 30).<br>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:<br>**Continuous** – Displays continuous images when X-rays are actuated.<br>**Snapshot** – Captures and displays one image when X-rays are actuated.<br>**Cine Record** – Gathers all images acquired into a cine loop.<br>Continuous and/or Snapshot mode may be disabled (Section 12.5 *Physician Preferences* on Page 33). |

## 10.2 Keyboard Controls

**Table 4 Keyboard Controls**

| Icon | Function Key | Function |
|---|---|---|
| | **F1** | Displays help window. |
| | **F2** | Displays the Patient Information window in Image Acquisition session.<br>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.<br>Pressing this key puts the system into manual mode. |
| | **Shift-F5** | Decreases mA if simultaneous is off.<br>Pressing this key puts the system into manual mode. |

**Table 4 Keyboard Controls (Continued)**

| Icon | Function Key | Function |
|---|---|---|
| | **F6** | Increases kV/mA if simultaneous is on or increases kV if simultaneous is off.<br>Pressing this key puts the system into manual mode. |
| | **Shift-F6** | Increases mA if simultaneous is off.<br>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. |
| | **F11** | Restores physician's defaults. |
| | **Shift-F11** | Returns the system to Auto Power mode. |
| | **F12** | Cycles through the Noise suppression settings during image acquisition. |

# 10.3 InSight FD System Footswitch Functions

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

**Figure 6 Wireless Footswitch**

**Table 5 Footswitch Pedal Functions**

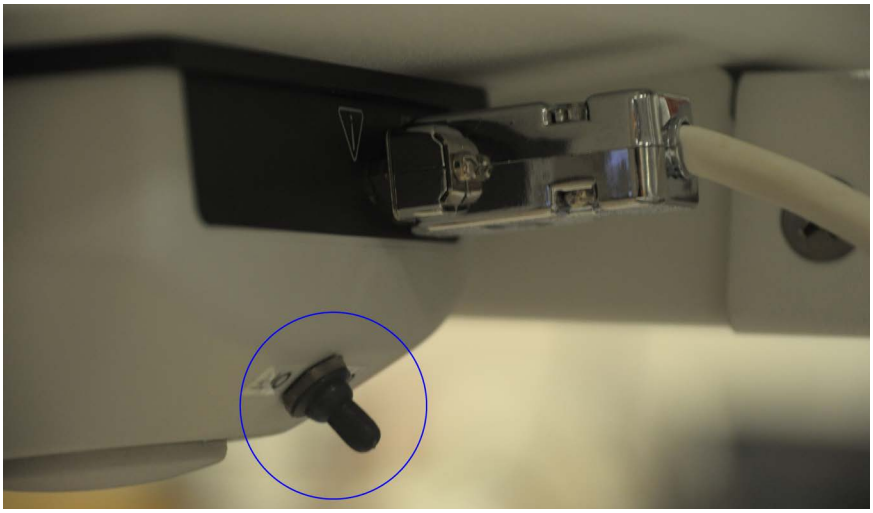
| | Icon | Pedal | Function |
|---|---|---|---|
| **A** | | **Save / Tag** | **Save** or **Tag** images |
| **B** | | **MegaView™ Image and/or Print** | • In **Perform Mode**, you can toggle between standard view and full-screen view (MegaView™ Image)<br>• Print images |
| **C** | | **X-ray** | Take **X-ray** |

**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*



### 10.3.1 Acquire an X-ray Image

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

### 10.3.2 Display a MegaView Image

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

### 10.3.3 Tag an Image

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

### 10.3.4 Save an Image

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

### 10.3.5 Print an Image

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

# 11 Using the System

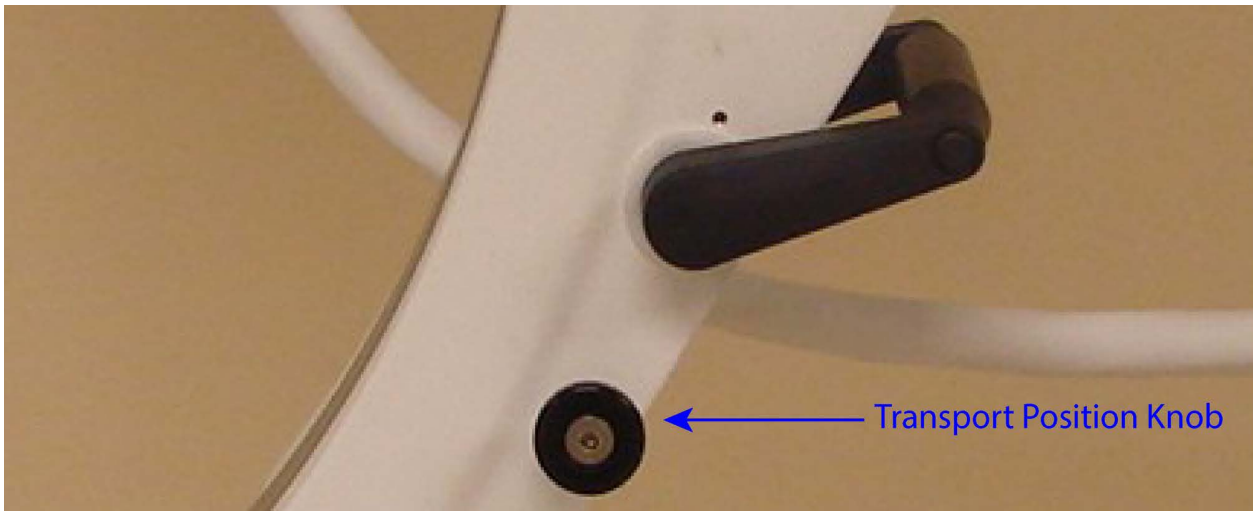
**Note** *InSight FD operators should read the Radiation Safety section before operating the system.*

## 11.1 Moving the System

**Warning:** *Before moving the system, the flex-arm and C-arm must be in the locked storage position to prevent tipping.*

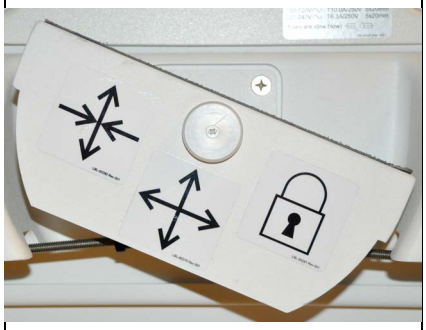
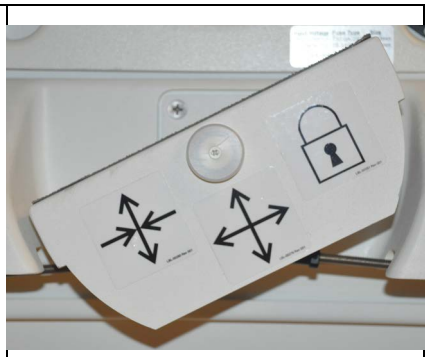
1. Ensure that the system is powered off.
   See Section 11.5 *Powering Down the System* on Page 22.)
2. Unplug the power cord and wrap it around the cord guides on the back of the cabinet.
3. Store the foot switch in the foot switch shelf.
4. Flip the monitor forward and down.
5. Place the flex-arm and C-arm in the locked position (Figure 7) using the Transport Position Knob on the side of the C-arm housing.

**Figure 7 Transport Position Knob**




6. 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 8 Rear Casters**

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

## 11.2 Adjusting the C-arm

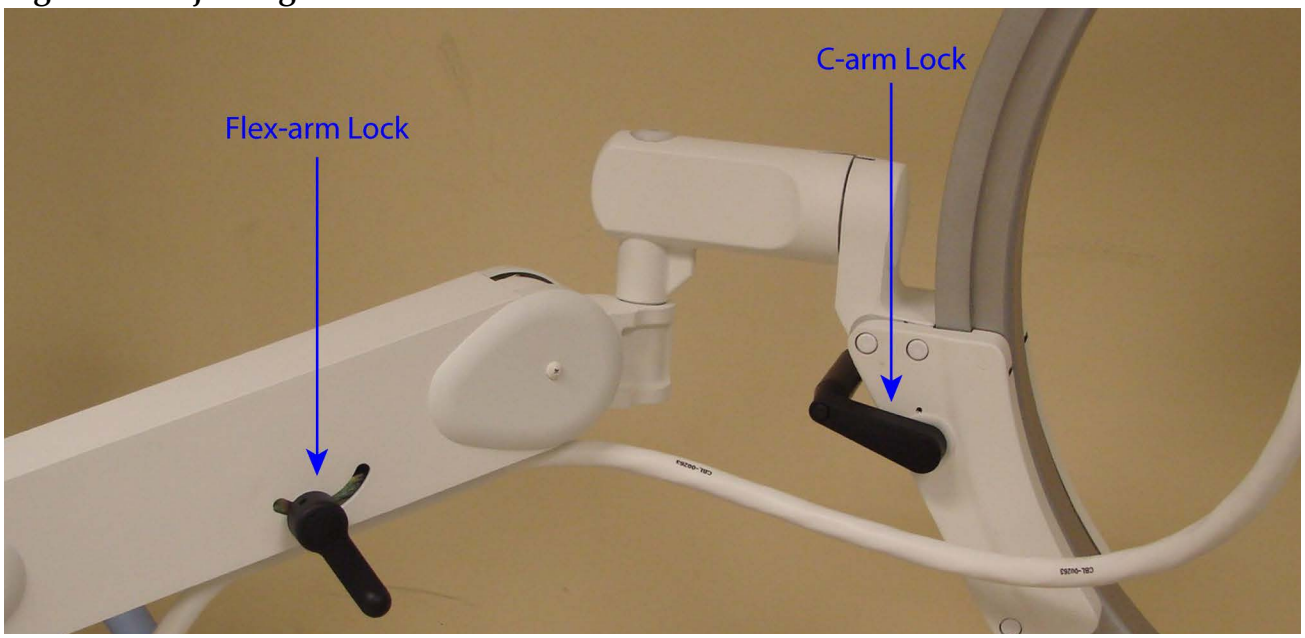
Turn the flex-arm lock counterclockwise to loosen; then adjust the flex-arm height.

To reposition the C-arm:

1. Turn the C-arm lock to loosen.
2. Roll the arm to the desired position.
3. 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.

**Figure 9 Adjusting the C-arm**

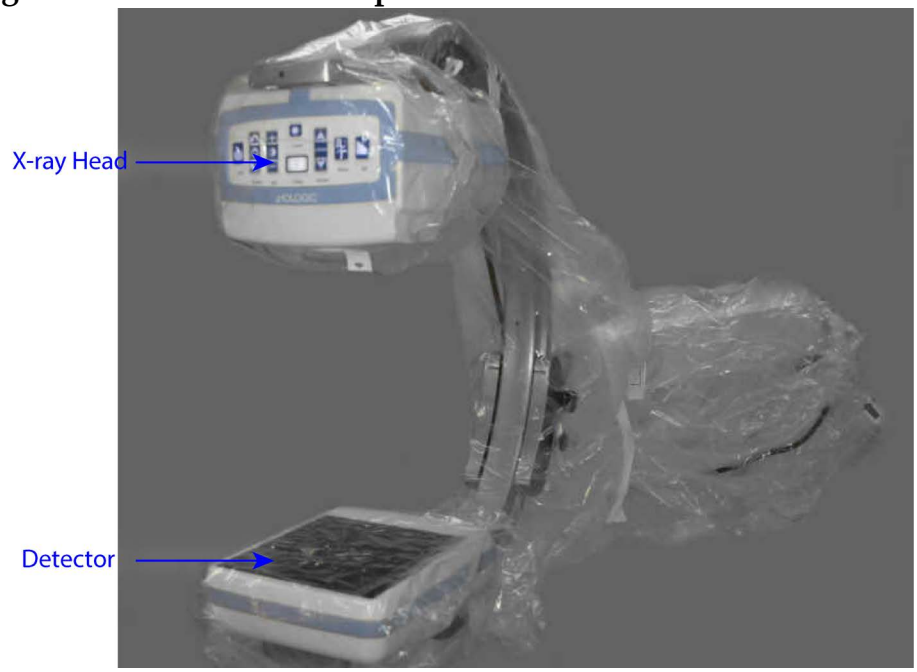



## 11.3 Sterile C-arm Drape

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).*

**Figure 10 Sterile C-arm Drape**



## 11.4 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 6 Conditioning Schedule**

| Step | kV | mA | Minimum Time |
|---|---|---|---|
| 1 | 40 | 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.*

## 11.5 Powering Down the System

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.

# 12 Configuring the Application

## 12.1 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:

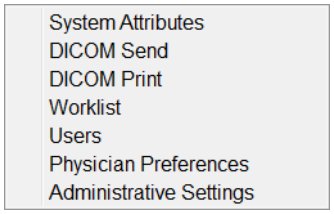
**Table 7 System Configuration User Interface**

| 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. |

## 12.2 System

From the **System Configuration** Menu (Figure 11) on the **Main Screen,** the **System** page (Figure 12) is accessible.

**Figure 11 System Configuration Menu**



## Figure 12 System

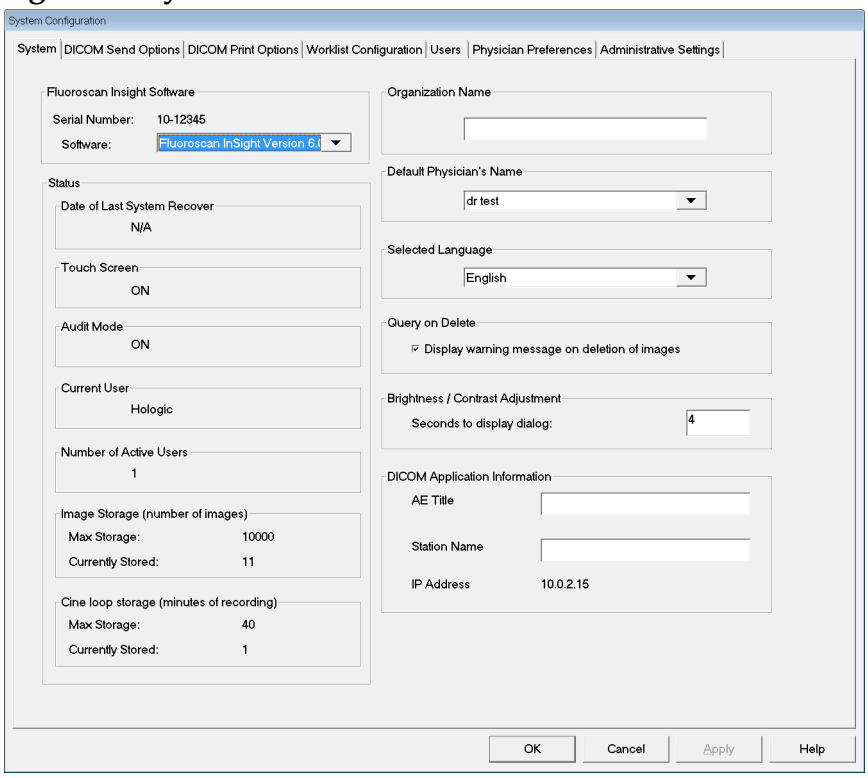


**Table 8 System Page**

| Section/Field | Description |
|---|---|
| **InSight FD Software**<br>**Serial Number**<br>**Software** | InSight FD system serial number.<br>dropdown list to display installed software and version. |
| **Status** | Displays the following current settings: |
| **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. |
| **Cine Loop Storage (minutes of recording)** | Maximum minutes of recording that can be stored on the system and the minutes currently stored. |
| **Organization Name** | Administrator can enter name. |
| **Default Physician's Name** | Select default physician to be used by the application. |
| **Selected Language** | Select language to be used by the application. |
| **Query on Delete** | Administrator can select to display warning message when deleting images. |
| **Brightness/Contrast Adjustment** | Sets the amount of time (from 1 to 60 seconds) that the Brightness/Contrast adjustment dialog will be displayed. |
| **DICOM Application Information** | AE Title and Station Name for the application. IP Address displays the network address assigned to the system the application is running on.<br>Station Name allows multiple systems to use the same AE Title. |

# 12.3 DICOM Send Options

Available from **System Configuration** Menu (Figure 11) on the **Main Screen**.

**Figure 13 DICOM Send Options**

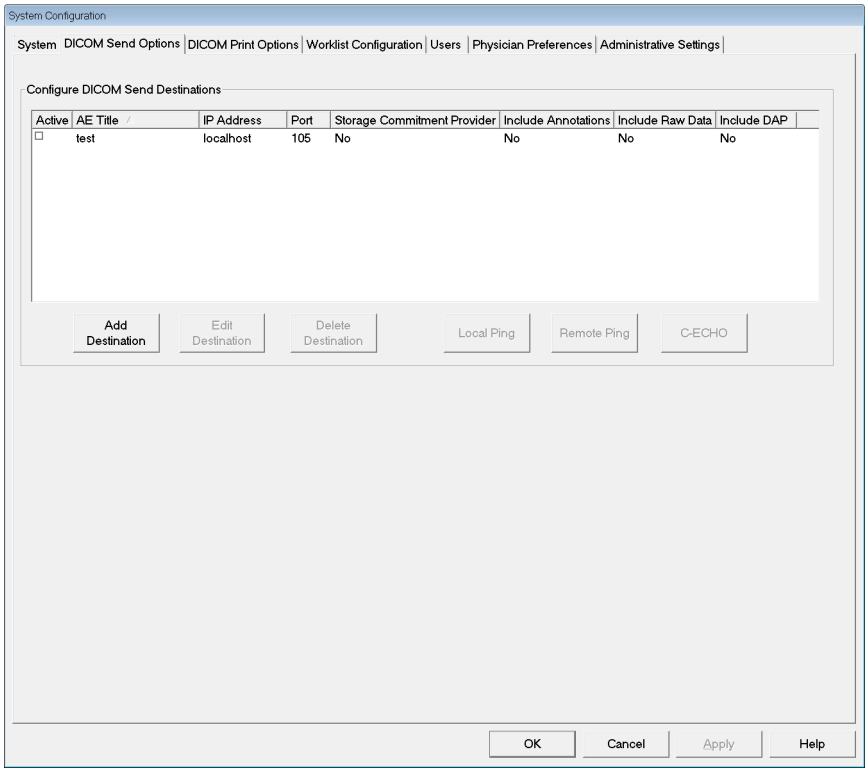



**Table 9 DICOM Send Options Page**

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

**Table 9 DICOM Send Options Page**

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

**Table 10 DICOM Send Options Page, Button Functions**

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

## 12.3.1 DICOM Print Options

Available from System Configuration Menu (Figure 11) on the Main Screen.

**Figure 14 DICOM Print Options**

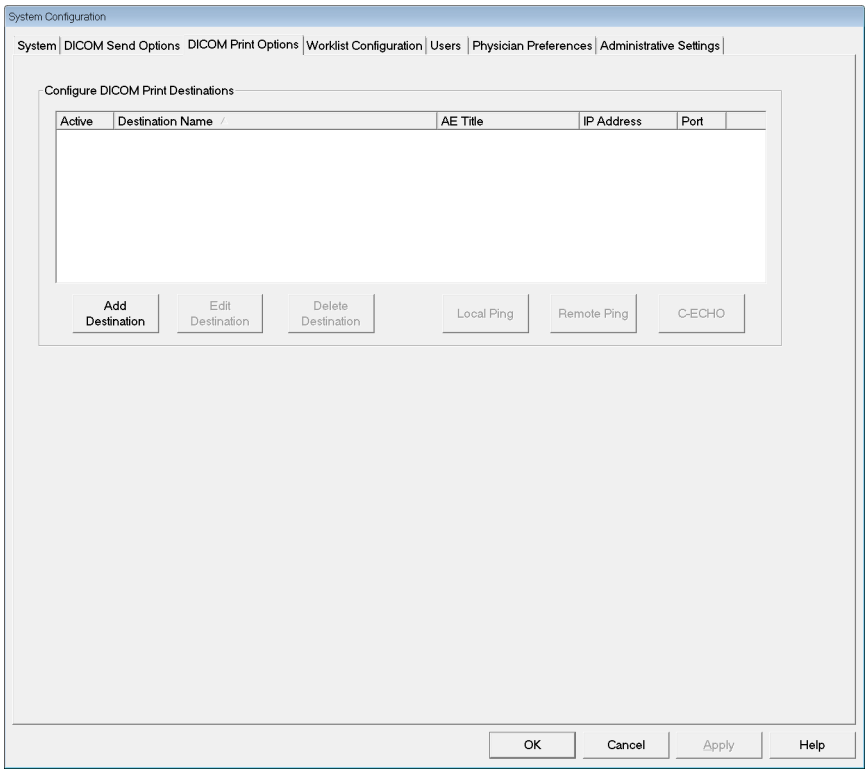



**Table 11 DICOM Print Options Page, Section/Field Descriptions**

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

**Table 11 DICOM Print Options Page, Section/Field Descriptions**

| Section/Field | Description |
|---|---|
| **Print Parameters** | |
| 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 12 DICOM Print Options Page, Button Functions**

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

# 12.4 Worklist Configuration

Available from **System Configuration** Menu (Figure 11) on the **Main Screen**.

**Figure 15 Worklist Configuration**

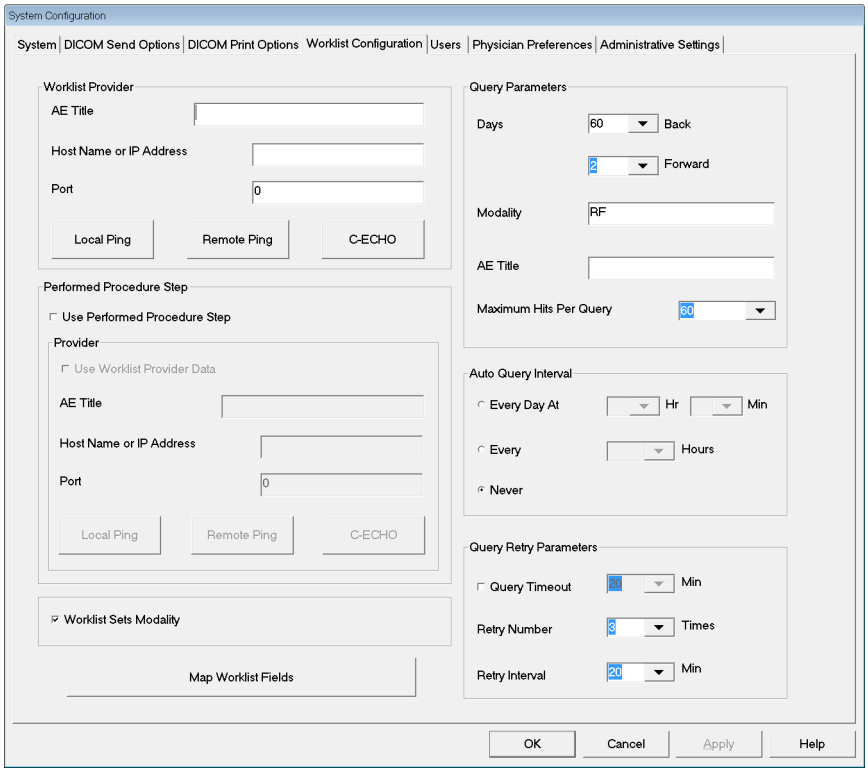



**Table 13 Worklist Configuration, Section Descriptions**

| Section/Field | Description |
|---|---|
| **Worklist Provider** | 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. |
| **Use Performed Procedure Step** | When checked, DICOM Modality Performed Procedure Step shall be performed when required. |
| **Provider** | Allows the user to access a system other than the one identified in the Worklist Provider section.<br>When *Use Worklist Provider Data* 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 13 Worklist Configuration, Section Descriptions**

| Section/Field | Description |
|---|---|
| **Query Parameters** | Provides entry fields to identify:<br>• Requesting system (AE Title)<br>• Type of worklist being requested (Modality)<br>• Range of days to query<br>• Maximum number of scheduled patient examinations to include in the worklist |
| **Auto Query Interval** | Specifies if automatic queries are to be performed and how often. |
| **Query Retry Parameters** | 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. |
| **Worklist sets Modality** | When checked, Modality is set by the Worklist. |

**Table 14 Worklist Configuration, Button Functions**

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

## 12.4.1 Users

Available from **System Configuration Menu** (Figure 11) on the **Main Screen**.

**Figure 16 Users**

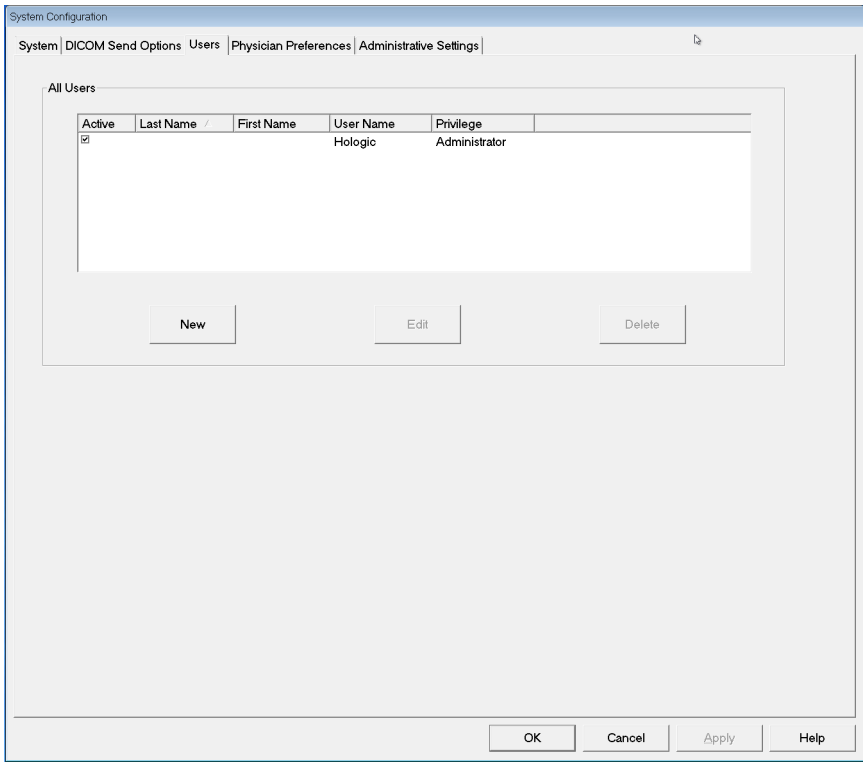



**Table 15 Users Page, Section/Field Descriptions**

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

**Table 16 Users Page, Button Functions**

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

## 12.5 Physician Preferences

Available from **System Configuration Menu** (Figure 11) on the **Main Screen**.

**Figure 17 Physician Preferences**

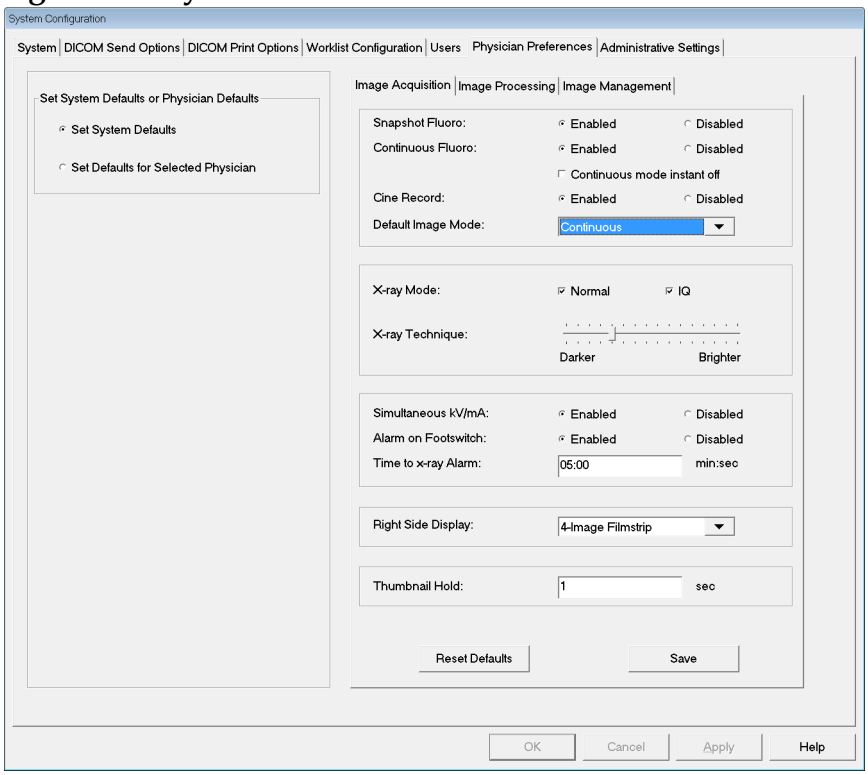


**Table 17 Physician Preferences, Section/Field Descriptions**

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

**Table 18 Physician Preferences, Button Functions**

| Button | Function |
|---|---|
| **Add Physician** | Adds the physician’s name and default preferences to the system. |
| **Delete Physician** | Deletes the selected physician from the system. |
| **Reset Defaults** | 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. |
| **Save** | Saves the preference settings for the System Defaults or for the selected physician. |

# 12.6 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 18 Physician Preferences — Image Acquisition**

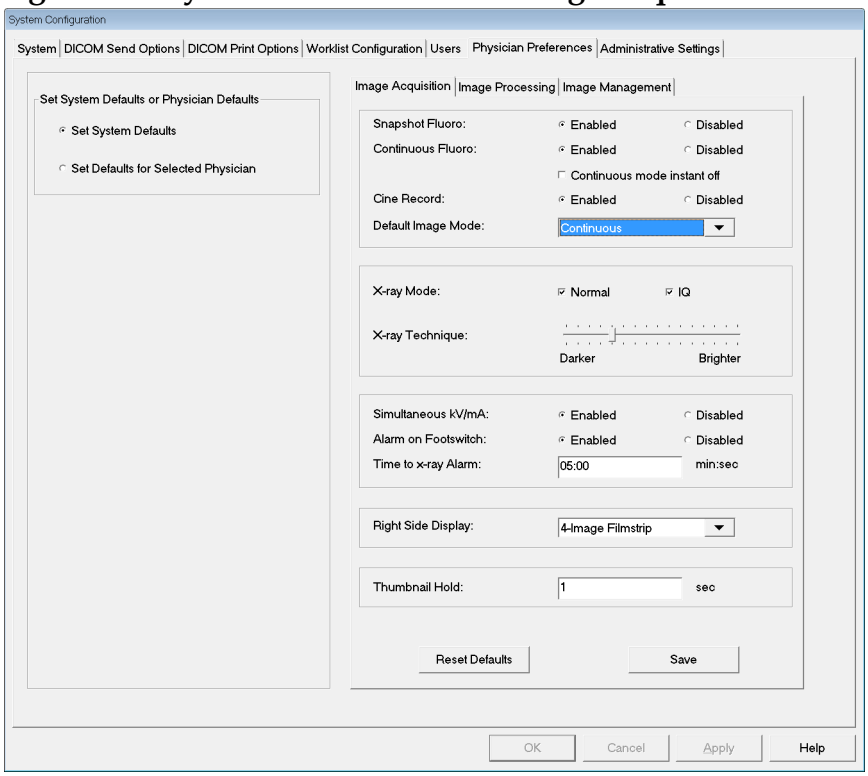


**Table 19 Physician Preferences, Image Acquisition Tab, Section/Field Descriptions**

| Section/Field | Description |
|---|---|
| **Snapshot Fluoro** | Enables/disables Snapshot image acquisition mode. |
| **Continuous Fluoro** | Enables/disables Continuous image acquisition mode. |
| **Continuous mode instant off** | When checked and acquiring images in Continuous mode, X-rays remain on until X-ray button or pedal is released. When unchecked, tapping the X-ray button or pedal causes image acquisition to behave like Snapshot mode; holding the button or pedal pressed cause X-rays to remain on until released. |
| **Default Image Mode** | Selects initial image mode setting for Image Acquisition screen. |
| **X-ray Mode** | Selects X-ray power level. Check Normal, IQ, or both. You must check at least one mode or accept the system default. If you uncheck both modes, the system enables Normal mode. The system default enables Normal and IQ modes. |
| **X-ray Technique** | 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. |
| **Simultaneous kV/mA** | 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. |
| **Alarm on Footswitch** | Enables or disables setting of the alarm to sound when the X-ray footswitch is depressed. |
| **Time to X-ray Alarm** | Sets when the alarm will sound based on the accumulated X-ray exposure time. Maximum value is 5 minutes. |
| **Right Side Display** | Selects initial filmstrip/tools area setting for Image Acquisition screen. |
| **Thumbnail Hold** | Determines the time a thumbnail image is displayed after the acquisition ends. |

# 12.7 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 19 Physician Preferences — Image Processing**

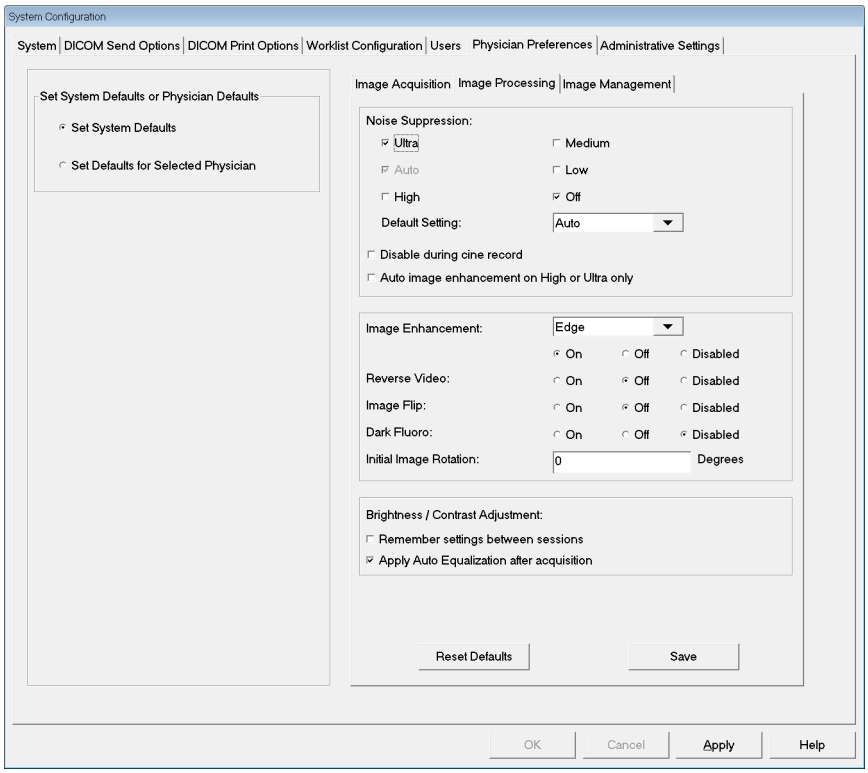


**Table 20 Physician Preferences, Image Processing Tab, Section/Field Descriptions**

| Section/Field | Description |
|---|---|
| **Noise Suppression** | Select noise suppression for Image Acquisition screen (Ultra, Auto, High, Medium, or Low).<br>**Disable during cine record** - When checked, disables noise suppression when cine recording.<br>**Auto edge enhancement on High or Ultra only** - When checked, image enhancement occurs only when noise suppression is set to **High or Ultra**.<br>**Default Setting** defines the initial noise suppression for an image acquisition session. Select Ultra, Auto, High, Medium, Low, or Off from the dropdown list. |
| **Image Enhancement** | 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. |
| **Reverse Video** | Select On/Off or Disabled, which affects the “image effects settings” in the Image Acquisition screen. |
| **Image Flip** | Select On/Off or Disabled, which affects the “image effects settings” in the Image Acquisition screen. |
| **Dark Fluoro** | Select On/Off or Disabled, which affects the “image effects settings” in the Image Acquisition screen. |
| **Initial Image Rotation** | Enter number of degrees to automatically rotate an image while it is being acquired. Enter a negative number for counterclockwise rotation. |
| **Brightness/ Contrast Adjustment** | **Remember settings between sessions** - When checked, maintains Brightness/Contrast settings for subsequent images.<br>**Apply Auto Equalization after acquisition** - When checked, applies Auto Equalization to the image to optimize contrast. |

# 12.8 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 20 Physician Preferences — Image Management**

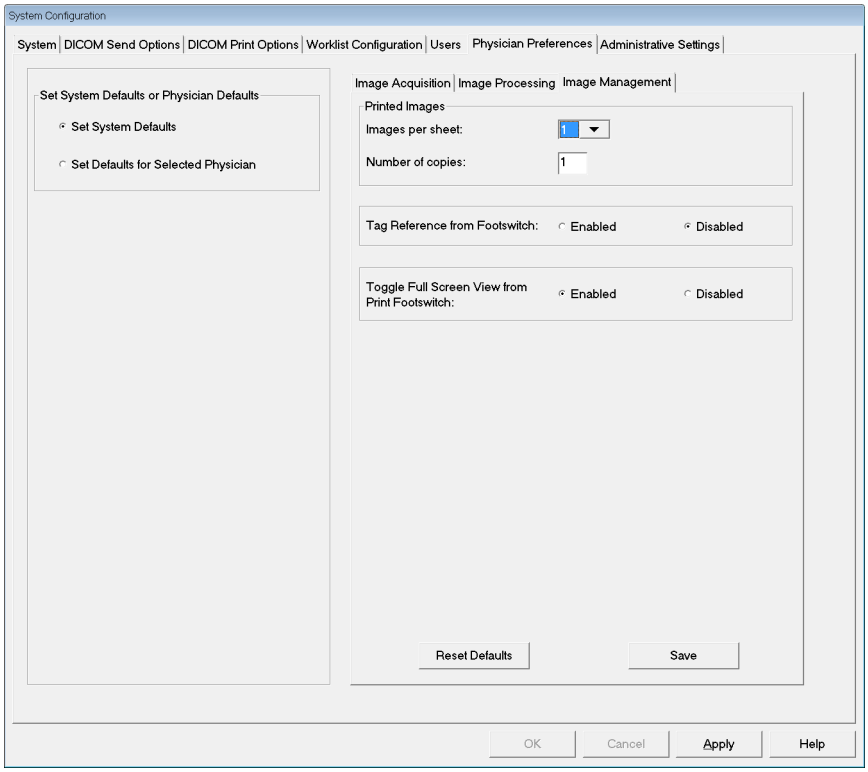



**Table 21 Physician Preferences, Image Management Tab, Section/Field Descriptions**

| Section/Field | Description |
|---|---|
| **Printed Images** | Select Number of Images per sheet and Number of copies to print. |
| **Tag Reference from Footswitch** | **When Enabled:**<br>Press the Save footswitch once to tag the image as a reference image.<br>Press Save a second time to save the image and remove the reference tag.<br>Press Save a third time to re-tag the image as a reference image.<br>**When Disabled:**<br>Press the Save footswitch once to save the image (does not tag the image as a reference image). |

# 12.9 Administrative Settings Page

Available from System Configuration Menu on the Main Screen.

**Table 22 Administrative Settings, Section Descriptions**

| Section/Field | Description |
|---|---|
| **Log Files** | Selection list of all log files. |
| **Set Level of Detail** | Administrators can set System Error log level of detail to Error Only or Error and Operations. |
| **Audit Mode** | Administrators can set on or off. |
| **Enable Touch Screen** | Administrators can enable or disable. |
| **Automatic Image Deletion** | Check Delete at the following limits to:<br>Establish the number of images at which a deletion prompt is displayed and the number of images to be deleted<br>and<br>Establish the number of cine minutes at which a deletion prompt is displayed and the number of cine minutes to be deleted.<br>Prior to deletion, the system displays the number of studies required to achieve the desired number of image, or cine minute, deletions. |
| **Last System Backup** | Displays date of last system configuration and calibration backup.<br>**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. |
| **System Shutdown** | Administrators can check or uncheck.<br>When checked, the full system shuts down (default setting).<br>When unchecked, only the InSight FD application shuts down. |

**Table 23 Administrative Settings, Button Functions**

| Button | Function |
|---|---|
| **Configure** | Displays Level of Detail section. |
| **Accept Change** | 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. |

# 13 Using the InSight FD 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.

## 13.1 Main Screen

**Figure 21 Main Screen**

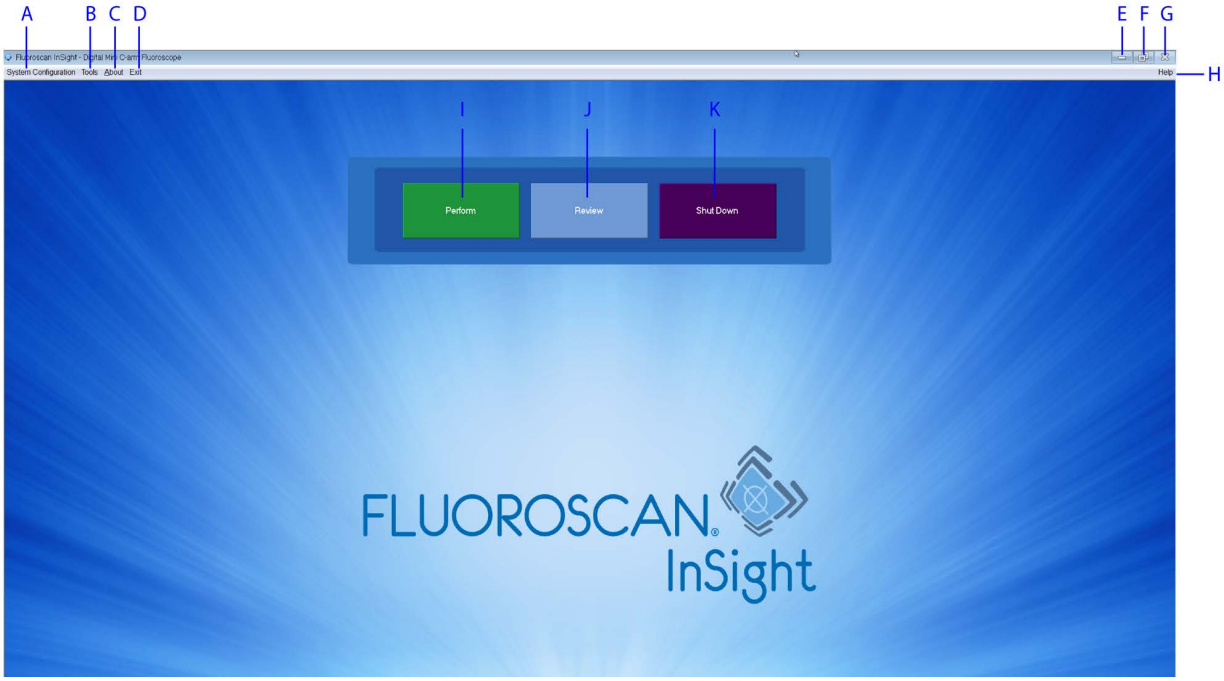


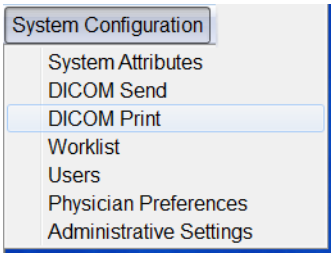

**Table 24 Main Screen Options**

| | |
|---|---|
| **A** | System Configuration Menu (Table 25). |
| **B** | Tools Menu (Table 26) |
| **C** | **About** - Displays InSight FD application's version number, serial number, and copyright data. |
| **D** | **Exit** Menu. Allows the user to logout or exit the application. |
| **E** | Minimize the screen |
| **F** | Maximize the screen |

**Table 24 Main Screen Options**

| | |
|---|---|
| **G** | Close the Application screen (unavailable) |
| **H** | **Help** - Displays help for using the screen. |
| **I** | Starts an image acquisition session (Section 13.2 *Image Acquisition Session* on Page 47) |
| **J** | Starts an image review session (Section 13.3.2 *Review Screen* on Page 57) |
| **K** | Exits application and shuts down the system. |

## Figure 22 System Configuration Pull-down Menu




## Figure 23 System Configuration Menu

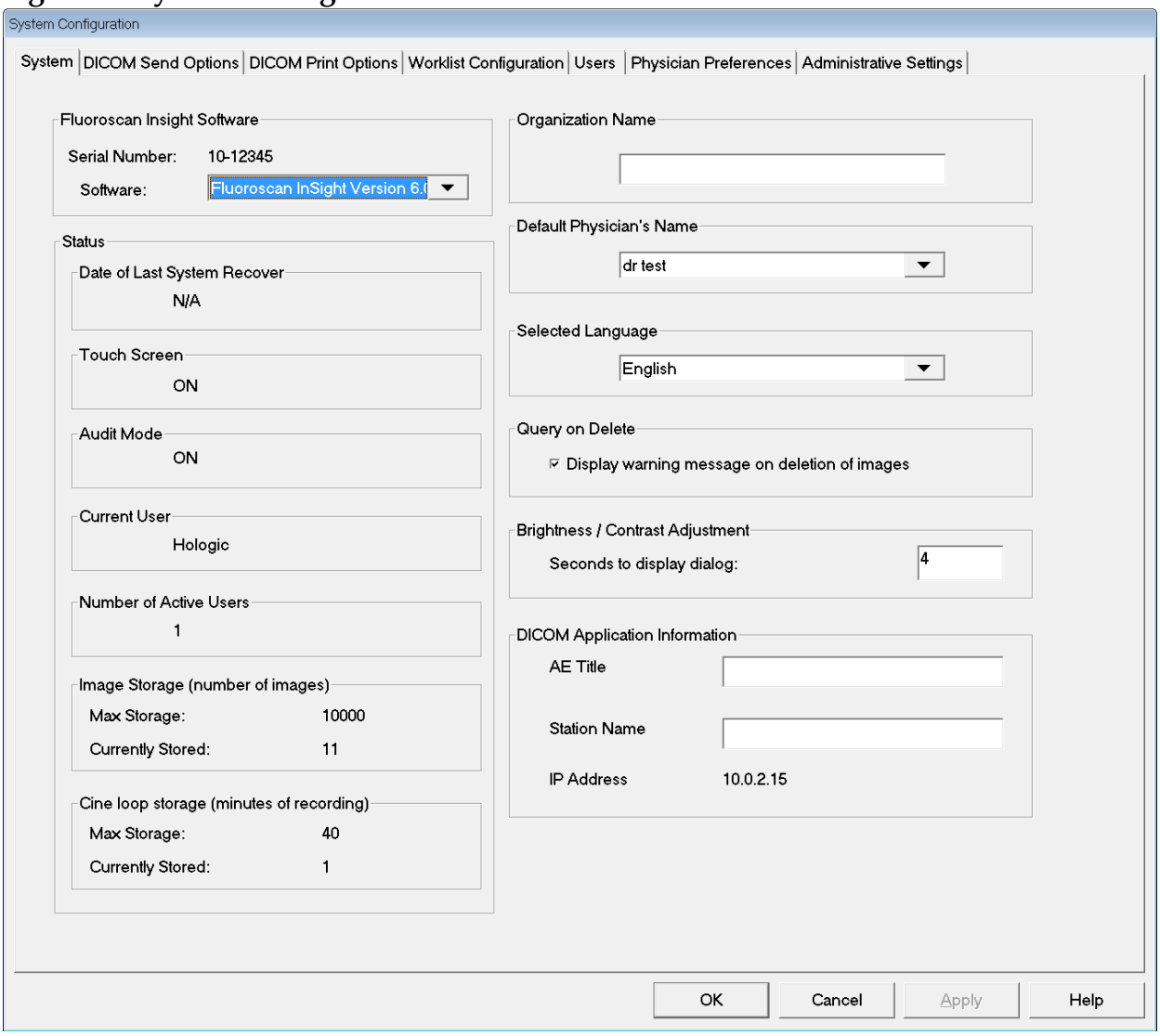


**Table 25 System Configuration Menu**

| Function | Description |
|---|---|
| **System Attributes** | 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.<br>All users can view system information.<br>(Section 12.2 *System* on Page 23) |
| **DICOM Send** | *Present if the DICOM Send option is installed.*<br>Administrators can add, edit, delete, and activate/deactivate Send destinations.<br>All users can view the list of destinations, view destination information, and ping destinations.<br>Section 12.3 *DICOM Send Options* on Page 26 |
| **DICOM Print** | *Present if the DICOM Print option is installed.*<br>Administrators can add, edit, delete, and activate/deactivate Print destinations.<br>All users can view the list of destinations, view destination information, and ping destinations.<br>Section 12.3 *DICOM Send Options* on Page 26 |
| **Worklist** | *Present if the Worklist option is installed.*<br>Administrators can add and configure a Worklist source.<br>All users can view the worklist source information and ping the source.<br>Section 12.4 *Worklist Configuration* on Page 30 |
| **Users** | User privileges within InSight FD are managed by Windows user accounts. Administrators can:<br>• Add new user mappings<br>• Edit existing user data, status (active/inactive) and privilege settings<br>• Delete user mapping.<br>All users can view the list of users registered on the system.<br>Section 12.4.1 *Users* on Page 32 |
| **Physician Preferences** | Administrators can maintain a list of registered physicians and edit default preferences.<br>All users can view the list of physicians registered on the system and view the default preferences for each physician.<br>Section 12.5 *Physician Preferences* on Page 33 |

**Table 25 System Configuration Menu (Continued)**

| Function | Description |
|---|---|
| **Administrative Settings** | 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.<br>Section 12.9 *Administrative Settings Page* on Page 40 |

**Figure 24 Tools Pull-down Menu**

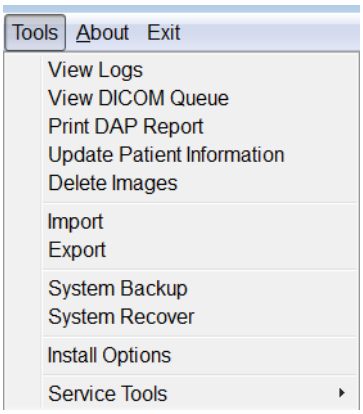
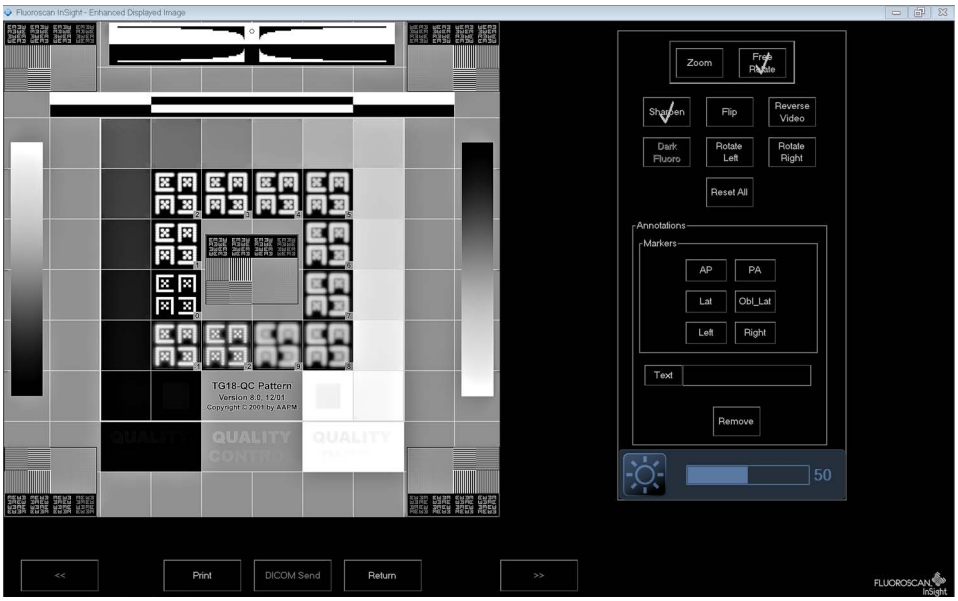



**Table 26 Tools Menu**

| Function | Description |
|---|---|
| **View Logs** | View, print, export and in some cases edit various log files the application maintains. |
| **View DICOM Queue** | *Present if the DICOM Send option is installed.*<br>View status of DICOM Send requests, and retry or delete selected requests. Section 13.8 *View DICOM Queue Window* on Page 73 |
| **Print DAP Report** | Display and print the Dose Area Product report.<br>*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.* |
| **Update Patient Information** | Administrators can update patient information for a selected patient study. Section 13.4.1 *Update Patient Study Information Window* on Page 62 |
| **Delete Images** | Administrators can delete selected images from the system. Section 13.7 *Delete Images Window* on Page 70 |

**Table 26 Tools Menu (Continued)**

| Function | Description |
|---|---|
| **Import** | Import selected images into the system from removable media. Section 13.6 *Import Images Window* on Page 68 |
| **Export** | Export selected images from the system to removable media (Table 40). |
| **System Backup** | Backup system configuration and calibration data to external media. |
| **System Recover** | Administrators can restore system configuration and calibration data from external media. |
| **Install Options** | Administrators can install application software options. |
| **Service Tools — SMPTE Pattern** | Administrators can open a test pattern to check monitor performance and quality.   |

# 13.2 Image Acquisition Session

## 13.2.1 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**.

**Figure 25 Select or Enter Patient Window**

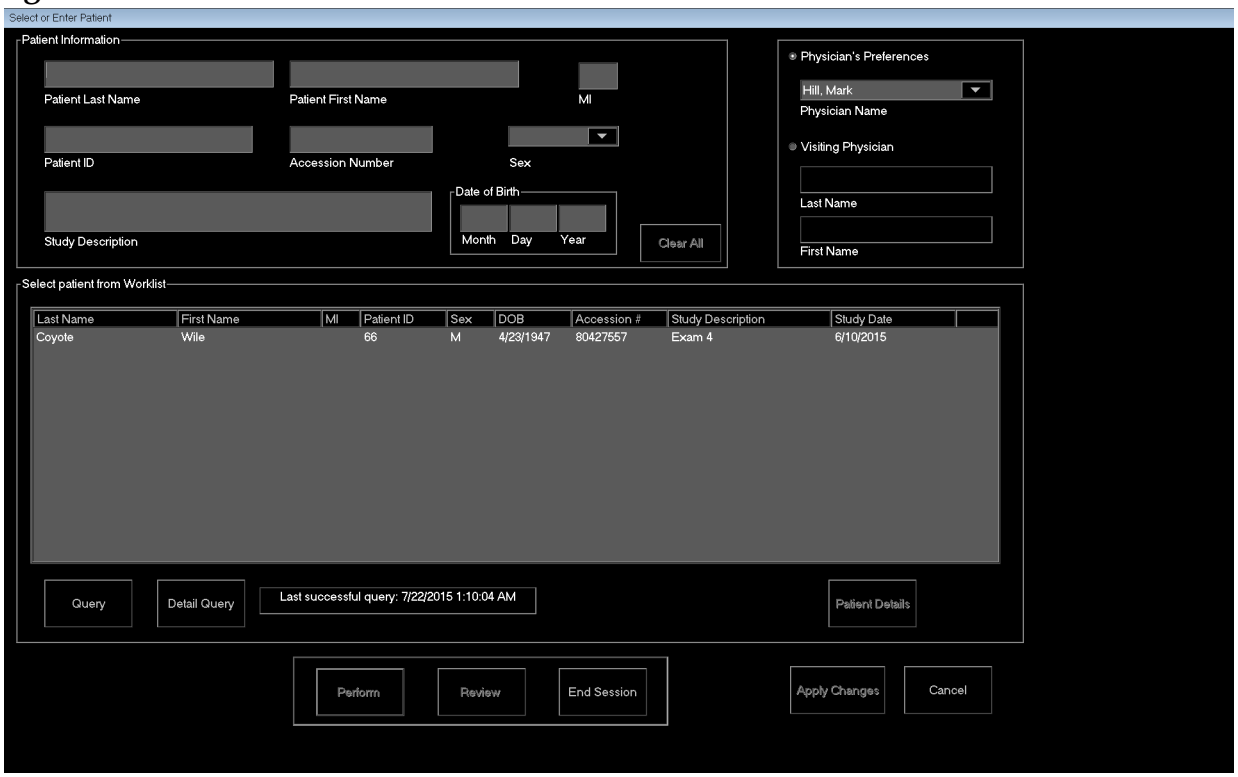



**Table 27 Select or Enter Patient Window, Section/Field Descriptions**

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

**Table 28 Select or Enter Patient Window, Button Functions**

| Button | Function |
|---|---|
| **Clear All** | Clears Patient Information fields |
| **Perform** | Displays the **Image Acquisition** screen |
| **Review** | Displays the **Review** screen |
| **End Session** | Terminates the entry of Patient Information and leaves the **Select or Enter Patient** screen |
| **Apply Changes** | Enters changes without leaving the **Select or Enter Patient** screen |
| **Cancel** | Cancel the entry of Patient Information without leaving **Select or Enter Patient** screen |

## 13.2.2 Image Acquisition Screen

**Figure 26 Image Acquisition Screen**

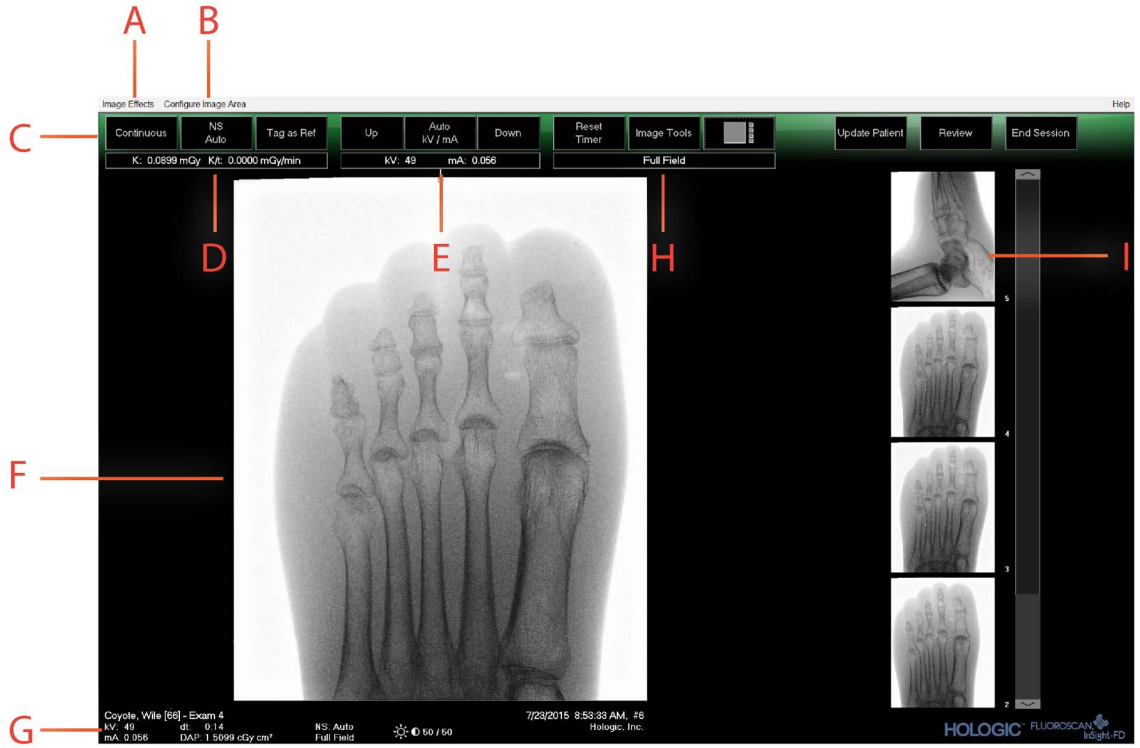



**Table 29 Image Acquisition Screen**

| | |
|---|---|
| **A** | Image Effects Menu (Table 30) |
| **B** | Configure Image Area Menu (Table 31) |
| **C** | Function Buttons (Table 32) |

**Table 29 Image Acquisition Screen**

| | |
|---|---|
| **D** | Displays AKR and cumulative air kerma while the X-ray tube is active. Air kerma is calculated at the entrance to the CMOS detector. |
| **E** | Displays current power settings. |
| **F** | Image Area. |
| **G** | Displays cumulative DAP |
| **H** | Displays collimation mode. Limited Field magnifies a small area.<br>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 (Section 9 *System Components* on Page 13). |
| **I** | Filmstrip/Tools Area (Table 33) for Tool Set description. |

**Figure 27 Image Effects Menu**

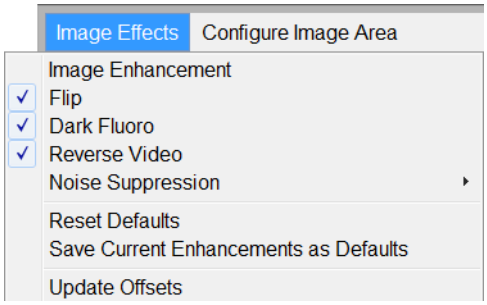



**Table 30 Image Effects Menu**

| Function | Description |
|---|---|
| **Image Enhancement*** | Images enhanced according to edge and sharpening configurations set in the Image Enhancement field in Table 44. |
| **Flip*** | Images are flipped before being viewed by the user. |
| **Dark Fluoro*** | Images have their white image pixels changed to black. |
| **Reverse Video*** | Images are changed to a negative (blacks go to white; whites go to black). |
| **Noise Suppression** | Selects noise suppression level. Selections are Ultra, Auto, High, Medium, Low and Off.<br>See Section 12.3 *DICOM Send Options* on Page 26 for default setting. |
| **Reset Defaults** | 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 30 Image Effects Menu (Continued)**

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

* May be disabled or initially checked or unchecked. (Section 12.5 *Physician Preferences* on Page 33)

**Figure 28 Configure Image Area Menu**

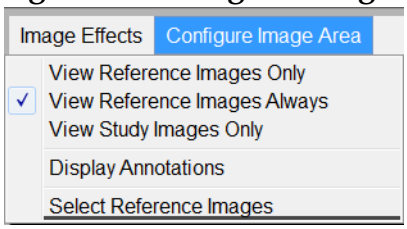



**Table 31 Configure Image Area Menu**

| Function | Description |
|---|---|
| **View Reference Images Only** | 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. |
| **View Reference Images Always** | 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. |
| **View Study Images Only** | Only images (reference and non-reference) acquired in the current session are displayed in the filmstrip. |
| **Display Annotations** | Displays annotations on the image displaying in the live image area. |
| **Select Reference Images** | Displays the Select Reference Images window allowing users to select images from any current patient study residing on the system.<br>Selected images are put into the filmstrip following any reference images acquired during the current session unless View Study Images Only is checked. |

**Figure 29 Image Acquisition Screen Buttons**

**Table 32 Image Acquisition Screen, Button Functions**

| Button | Function |
|---|---|
| **Acquisition Mode Selection** | Cycles through:<br>**Continuous** – Displays continuous images when X-rays are actuated.<br>**Snapshot** – Captures and displays one image when X-rays are actuated.<br>**Cine Record** – Gathers all images acquired into a cine loop.<br>Continuous and/or Snapshot mode may be disabled (Section 12.5 *Physician Preferences* on Page 33). |
| **NS (Noise Suppression)** | Cycles through the levels selected during configuration. See Table 17 Physician Preferences, Section/Field Descriptions on Page 34.<br>Select Ultra to acquire images for very still anatomy. Image processing for Ultra level imaging averages frames at High noise suppression. |
| **Tag as Ref** | Marks the image as a reference image for the current session or unmarks a marked image. |
| **Up** | Increases the kV and/or mA incrementally by one. |
| **X-ray Power Adjustment Selection** | Cycles through:<br>**Auto kV / mA** - Automatically adjusts kV / mA.<br>**Manual kV / mA** (simultaneous kV/mA enabled) - Allow the user to manually increase or decrease kV / mA.<br>**Manual kV** (simultaneous kV/mA disabled) - Allow the user to manually increase or decrease the kV.<br>**Manual mA** (simultaneous kV/mA disabled) - Allow the user to manually increase or decrease the mA.<br>**Auto IQ kV / mA** - Automatically adjusts kV / mA. Select IQ mode to acquire an enhanced image with improved clarity. Using IQ mode increases the X-ray dose to the patient. Use Auto IQ when enhanced clarity is required in accordance with ALARA.<br>See Section 12.5 *Physician Preferences* on Page 33 for setting simultaneous kV/mA. |
| **Down** | Decreases the kV and/or mA incrementally by one. |
| **Reset Timer** | Resets the X-ray warning timer to zero and turns off the audible alarm. |

**Table 32 Image Acquisition Screen, Button Functions (Continued)**

| Button | Function | |
|---|---|---|
| **Image Tools** | Shows or hides the tool set in the Filmstrip/Tools area. | |
| **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 33 Tool Set**

| Button | Function |
|---|---|
| **Zoom** | Magnifies the area under a magnifying glass two times.<br>The magnified area can be moved to any place on the image. |
| **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 Table 33. |
| **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. |
| **Dark Fluoro *** | Applies/removes dark fluoro (white image pixels change to black) to the image. |
| **Rotate Left** | Rotates the image in 10 degrees increments counterclockwise. |
| **Rotate Right** | Rotates the image in 10 degrees increments clockwise. |
| **Reset All** | Resets all image processing on the image to the last saved state of the image. |

**Table 33 Tool Set (Continued)**

| Button | Function | |
|---|---|---|
| **Annotations** | 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.<br>Annotations can be moved and/or removed using the mouse or touch screen.<br>To remove an annotation, deselect Free Rotate, select the annotation, click Delete.<br>Annotations include:<br>AP, PA, Lat, Obl_Lat, Left, Right, Text (Places the text in the text edit box on the image). | |
| **Brightness/ Contrast** | Allows adjustment of brightness and contrast of the selected image. | |
| | | Brightness control |
| | | Contrast control |

*This button may be configured on, off, or disabled (Section 12.5 *Physician Preferences* on Page 33).

## 13.2.3 Select Reference Images Window

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

**Figure 30 Reference Images Window**

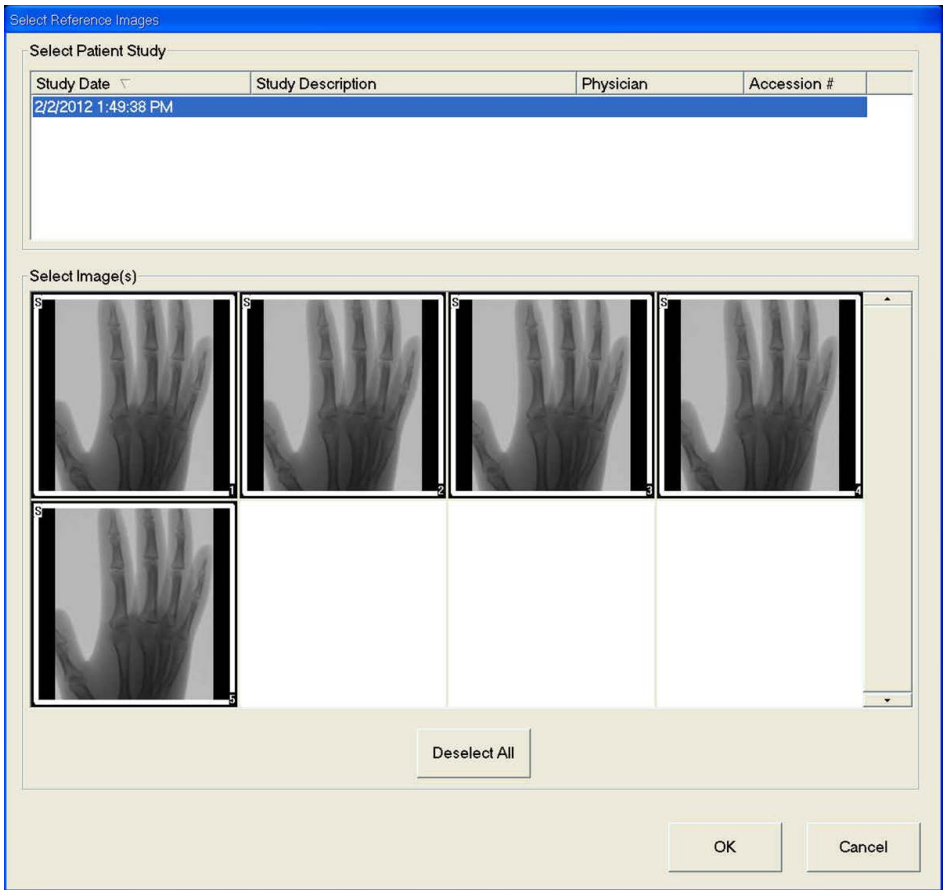



**Table 34 Select Reference Images Window, Section Descriptions**

| Section | Description |
|---|---|
| **Select Patient Study** | Selection list of prior studies for the current patient stored on the system.<br>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. |
| **Select Image(s)** | A selection list of thumbnail images contained in the selected patient/study file.<br>A white box surrounds selected images. Multiple images can be selected. All images can be selected/unselected by clicking **Select All** or **Deselect All**. A scroll bar is displayed if the filmstrip layout does not show all images. |

**Table 35 Select Reference Images Window, Button Functions**

| Button | Function |
|---|---|
| **Select All/ Deselect All** | Selects or deselects all images in the image selection list. |
| **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. |

# 13.3 Review Images Session

## 13.3.1 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 31 Study for Review**

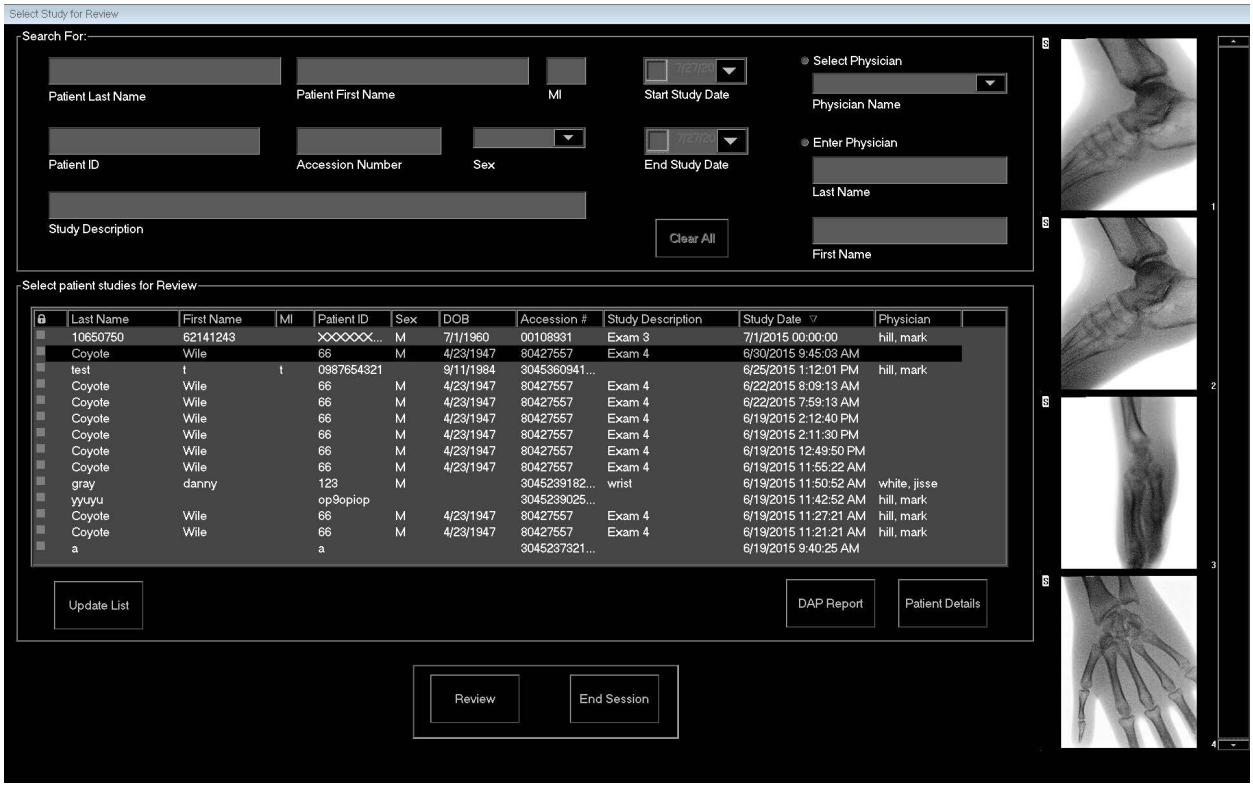


**Table 36 Select Study for Review Window, Section/Field Descriptions**

| Section/Field | Description |
|---|---|
| **Search For** | Search criteria entry fields.<br>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. |
| **Select Physician** | Selection button and dropdown selection list of physicians registered on the system. |
| **Enter Physician** | Selection button and two entry fields for physician's name. Use when a physician's name is not registered on the system. |
| **Select Patient Studies for Review** | Selection list of all patient/study records on the system.<br>Selection list can be filtered by completing one or more fields in the "Search For" section and clicking **Update List**.<br>The selection list can be sorted on any column by clicking in the respective column label.<br>One or more studies can be selected. |

**Table 37 Select Study for Review Window, Button Functions**

| Button | Function |
|---|---|
| **Clear All** | Clears all entries in the *Search For* section. |
| **Update List** | Updates the *Select Patient Studies for Review* selection list using criteria contained in the *Search For* section to limit the list. If all *Search For* parameters are empty, a list of all studies on the system is retrieved. |
| **DAP Report** | Displays the DAP report for the selected patient.<br>*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.* |
| **Patient Details** | Enabled when only one study is selected.<br>Displays patient information. |
| **Review** | Displays the Review screen. *At least one study must be selected to enable the Review button.* |
| **End Session** | Terminates the review session. |

## 13.3.2 Review Screen

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

**Figure 32 Review Images Screen**

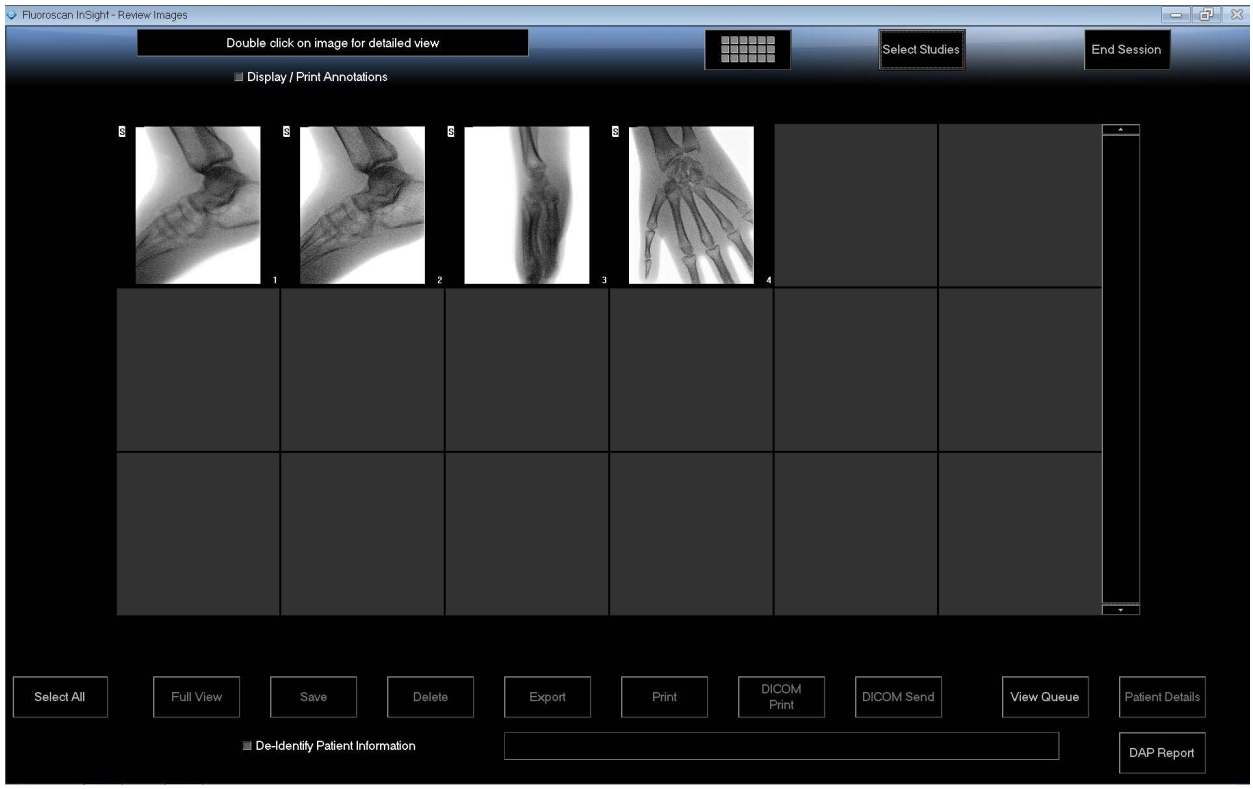



**Table 38 Review Screen, Button Functions**

| Button | Function | |
|---|---|---|
| **Display Mode Selection** | Determine how images are displayed. | |
| | | Displays one row of two images. |
| | | Displays two rows of four images. |
| | | Displays three rows of six images. |
| **Select Studies** | Selects studies for review. | |
| **Display/Print Annotations** | Displays or prints annotations on the displayed image. | |
| **Select/Deselect All** | Toggles between:<br>**Select All** - Selects all unselected images.<br>**Deselect All** - Unselects all selected images. | |

**Table 38 Review Screen, Button Functions (Continued)**

| Button | Function |
|---|---|
| **Full View** | Displays the selected image in the Enhanced Displayed Image screen (Section 13.3.3 *Enhanced Displayed Image Screen* on Page 60) |
| **Save** | Saves selected images or cine loop to the patient's record.<br>If the number of stored images or minutes of cine loop exceed the storage limit, a message is displayed. |
| **Delete** | Deletes the selected images. 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. |
| **Export** | Copies the selected image(s) or cine loop to removable media. Patient information will be removed from images when *De-Identify Patient Information* is checked. |
| **Print** | Prints the selected image(s) to the local printer.<br>Images will be printed with annotations when *Display/Print Annotations* is checked. Patient information will be removed from images when *De-Identify Patient Information* is checked. |
| **DICOM Print** | Sends the selected images to a DICOM node printer for printing. Images will be printed with annotations when *Display/Print Annotations* is checked. Patient information will be removed from images when *De-Identify Patient Information* is checked. |
| **DICOM Send** | Sends the selected image(s) to a DICOM Send node. Patient information will be removed from images when *De-Identify Patient Information* is checked. |
| **View Queue** | Displays the status of all DICOM Send requests (Section 13.8 *View DICOM Queue Window* on Page 73) |
| **Patient Details** | Displays patient information. Click **Additional Details** to reveal **Vista Dialog** (Figure 34). |
| **DAP Report** | Displays the DAP report for the selected patient.<br>**Note:** Click DICOM Send, on the DAP Report display screen, to send the DAP Report to a DICOM destination. |
| **De-Identify Patient Information** | Omits protected patient health information details related to specific patients. |
| **Update Patient / Select Study** | In an acquisition session, returns to the Select or Enter Patient window to view or update patient information<br>In a review session, returns to the Select Patient for Review window to select a different patient study. |

**Table 38 Review Screen, Button Functions (Continued)**

| Button | Function |
|---|---|
| **Perform** | Visible only in an acquisition session.<br>Returns to the image acquisition screen. |
| **End Session** | Terminates the current session. |

**Figure 33 Patient Details**

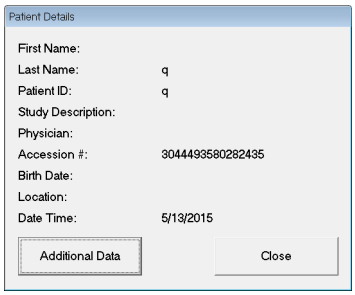
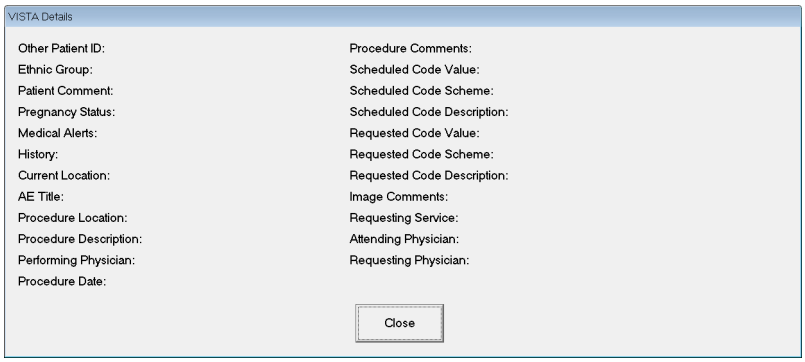



**Figure 34 VISTA Details**




### 13.3.3 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 35 Enhanced Displayed Image Screen**

The tool set is identical to the tool set described in Table 33

**Table 39 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 *Query on Delete* is enabled, the user is asked to confirm the deletion. Click **Yes** to confirm; **No** to cancel the deletion. |
| **Return** | Returns to the Review screen. |
| **>> (Next Image)** | Displays the next image. |

# 13.4 Maintaining Patient Study Records

## 13.4.1 Update Patient Study Information Window

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

**Figure 36 Tools Menu**

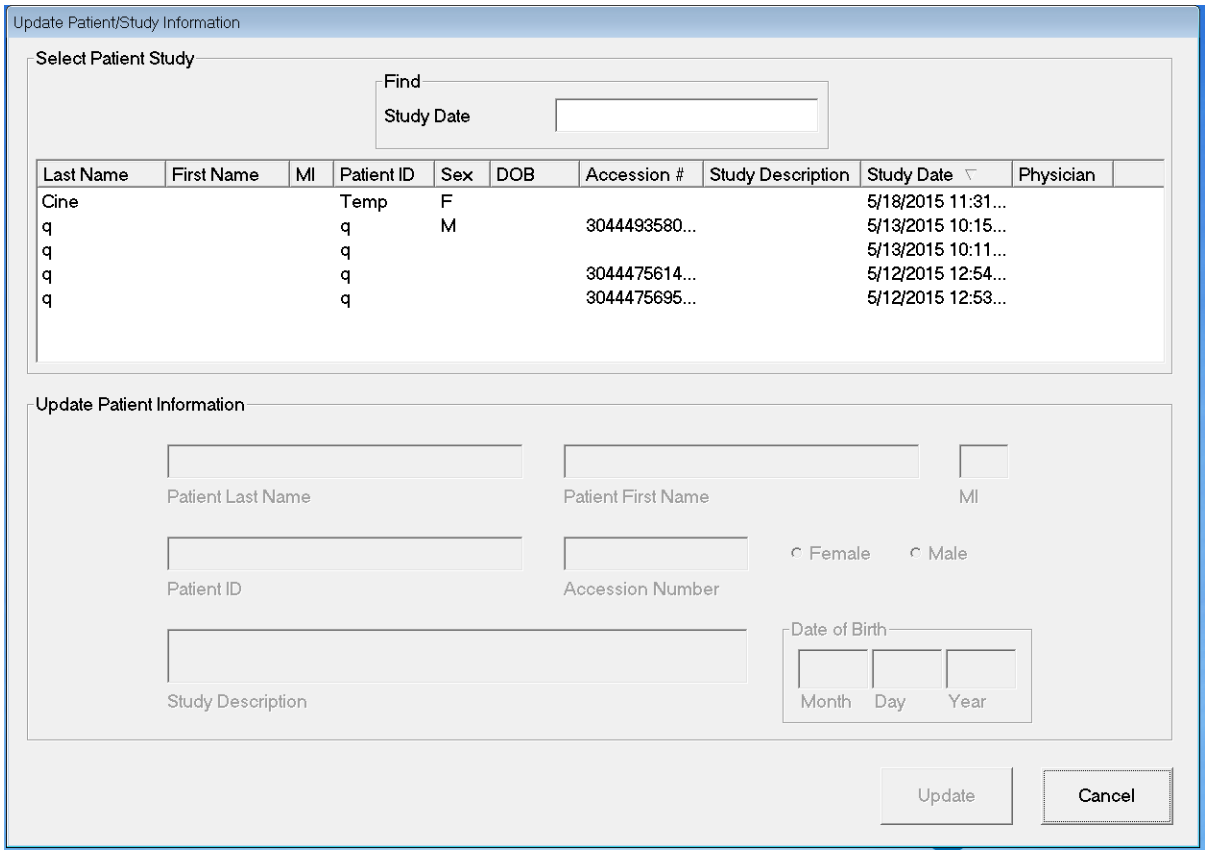



**Table 40 Update Patient/Study Information Window, Section Descriptions**

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

**Table 41 Update Patient/Study Information Window, Button Functions**

| Button | Function |
|---|---|
| **Update** | Updates the patient information on all images in the selected study.<br>*Note The Auto-Accession number is associated with a specific patient. It does not change when patient information is updated.* |
| **Cancel** | Closes the window without updating and returns to the main screen. |

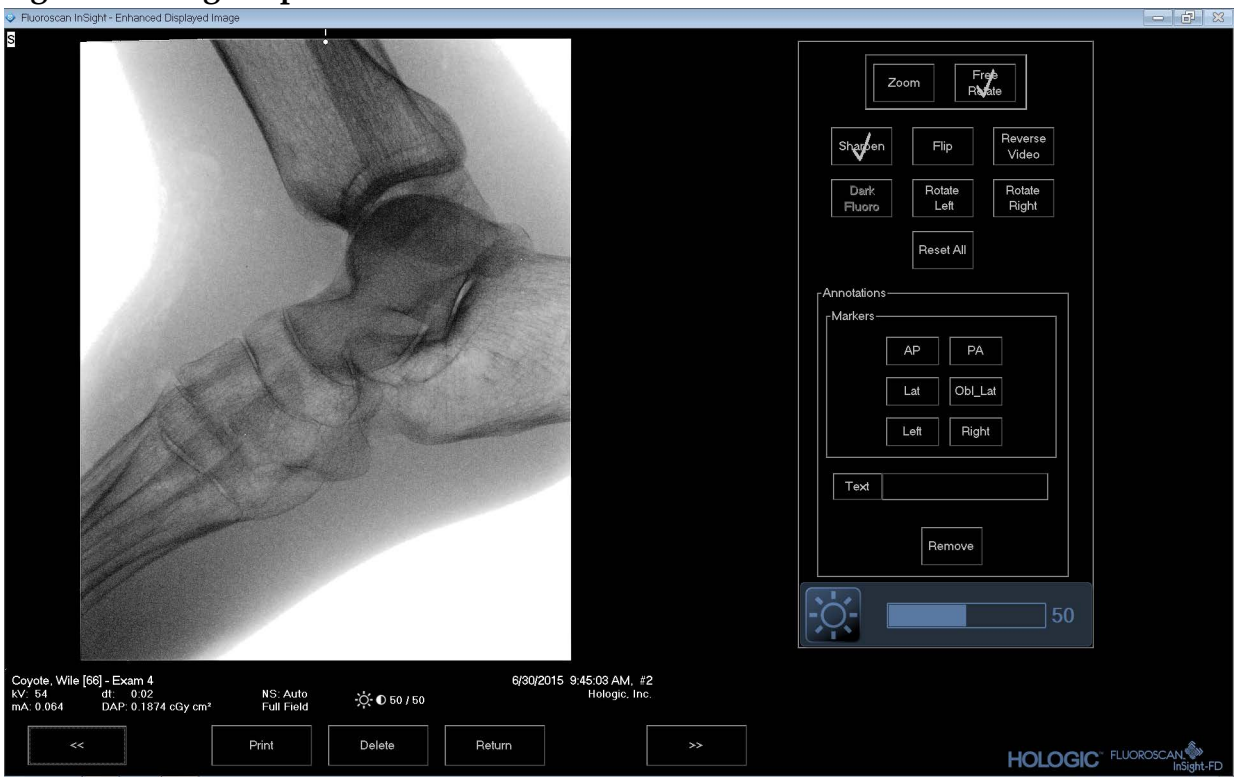
# 13.5 Export Images

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

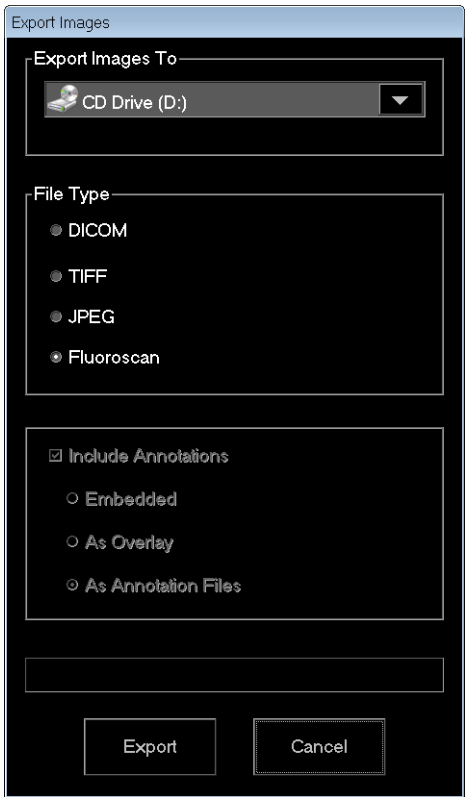
## 13.5.1 Export from Review Images Screen

1. From the **Review images** Screen (Figure 37), Select images for export.
2. Click **Export** to open the **Export Images** Window (Figure 38).
3. Select the options for export: File Type and/or Annotations
4. Click **Export**.

## Figure 37 Image Export from Review Screen



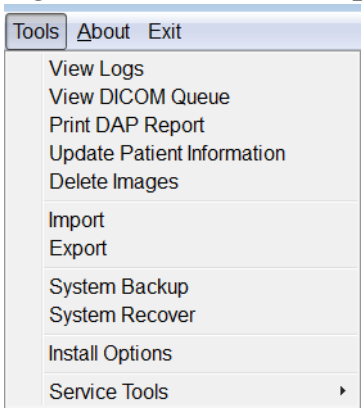

## Figure 38 Export Images



## 13.5.2 Export from Review Images Screen

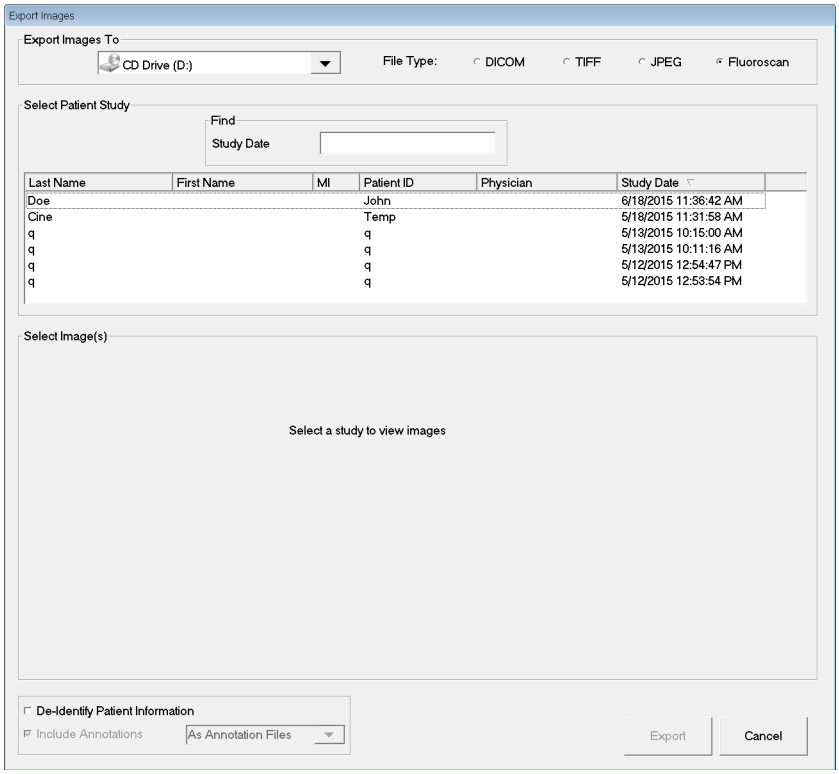
1. From the **Tools** Menu (Figure 39), select **Export**.

**Figure 39 Tool Menu Export**




2. Click **Export** to open the **Export Images** Window.
3. In the **Export Images** window (Figure 40), select the studies from which files will be exported.

**Figure 40 Export Images from Tool Menu**




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 42 Export Window, Section Descriptions**

| Section | Description |
|---|---|
| **Export Images to** | Selection list of removable media devices currently available to the system. *Other Locations* allows the user to browse for a folder on the system or network. |
| **File Type** | File format selection. |
| **Select Patient Study** | Selection list of all patient/study records on the system and a search criteria section (Find).<br>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.<br>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. |
| **Find** | Use to quickly locate a patient/study. |
| **Select Image(s)** | Images are displayed when one patient/study is selected. Images are not displayed when multiple studies are selected.<br>A selection list of thumbnail images contained in the selected patient/study file.<br>A white box surrounds selected images. Multiple images can be selected. All images can be selected/unselected by clicking **Select All** or **Deselect All**. |
| **De-Identify Patient Information** | When checked, removes patient identification data from images being exported. |
| **Include Annotations** | When checked, includes annotations with exported images.<br>Method of inclusion choices are:<br>Embedded - Annotations are embedded into the bitmap image.<br>As Overlay -Annotations are included as a DICOM overlay.<br>As annotation files - Annotations are included as a separate file. |

**Table 43 Export Window, Button Functions**

| Button | Function |
|---|---|
| **Patient Details** | Enabled when only one image is selected.<br>Displays patient information. |
| **Select All/ Deselect All** | Selects or deselects all images in the image selection list. |
| **Export** | 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. *Images are not deleted from the system*. |
| **Cancel** | Closes the window without exporting images and returns to the main screen. |

# 13.6 Import Images Window

Available from **Tools** Menu (Figure 41) on the **Main Screen**.

**Figure 41 Tools Menu**

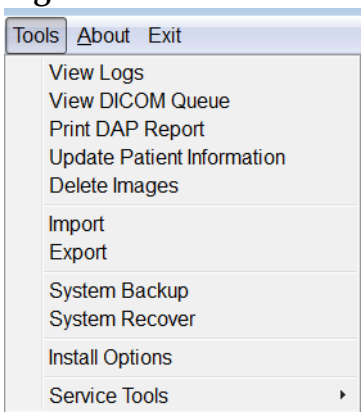



**Figure 42 Import Images Window**

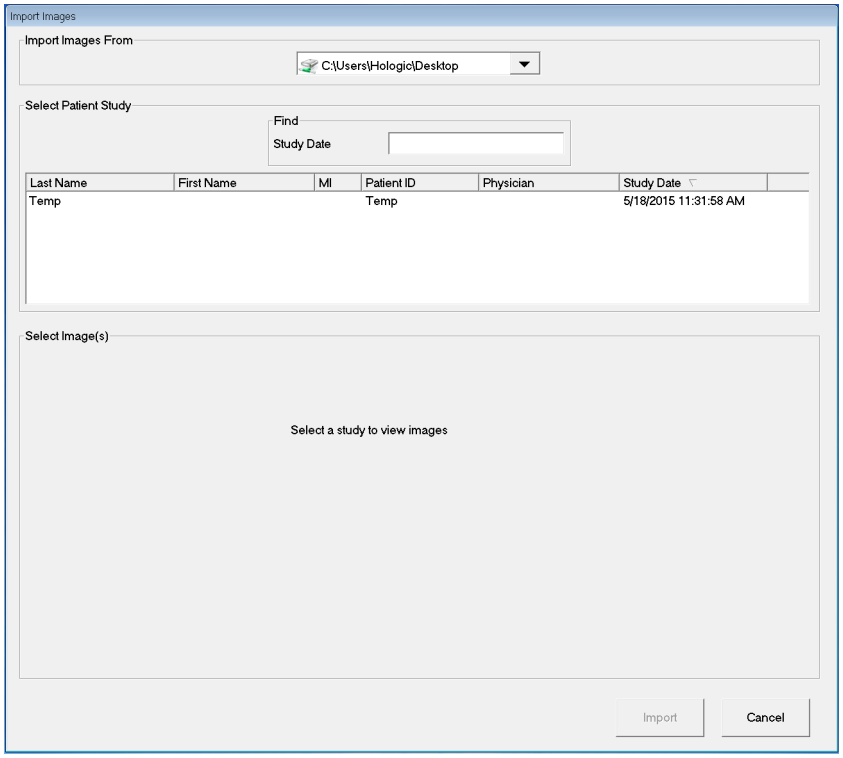


**Table 44 Import Window, Section Descriptions**

| Section | Description |
|---|---|
| **Import Images from** | Selection list of removable media devices currently available to the system. **Other Locations** allows the user to browse for a folder on the system or network. |
| **Select Patient Study** | Selection list of all patient/study records on the selected media and a search criteria section (Find).<br>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.<br>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. |
| **Find** | Use to quickly locate a patient/study. |
| **Select Image(s)** | Images are displayed when one patient/study is selected. Images are not displayed when multiple studies are selected.<br>A selection list of thumbnail images contained in the selected patient/study file.<br>A white box surrounds selected images. Multiple images can be selected. All images can be selected/unselected by clicking **Select All** or **Deselect All**. |

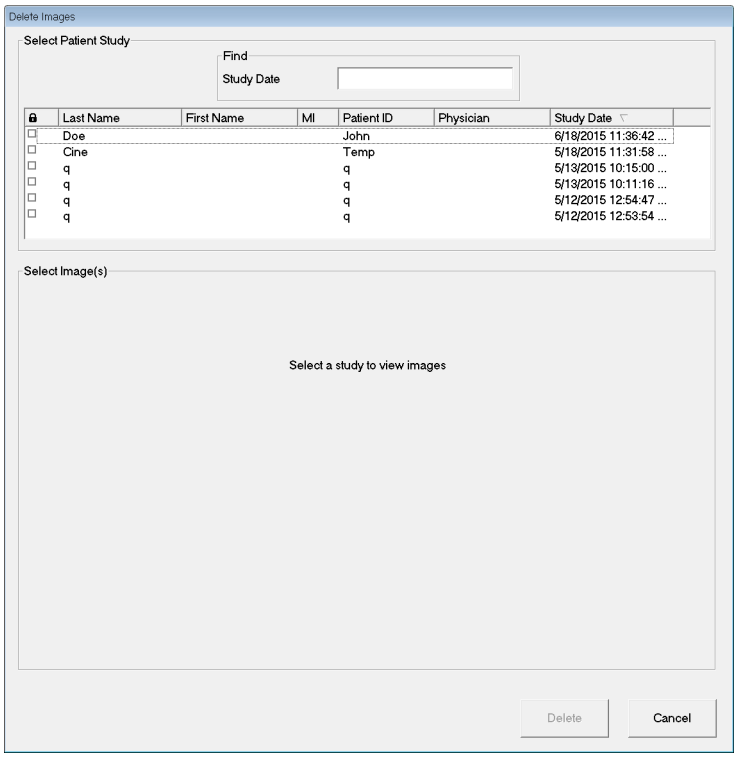
**Table 45 Import Window, Button Functions**

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

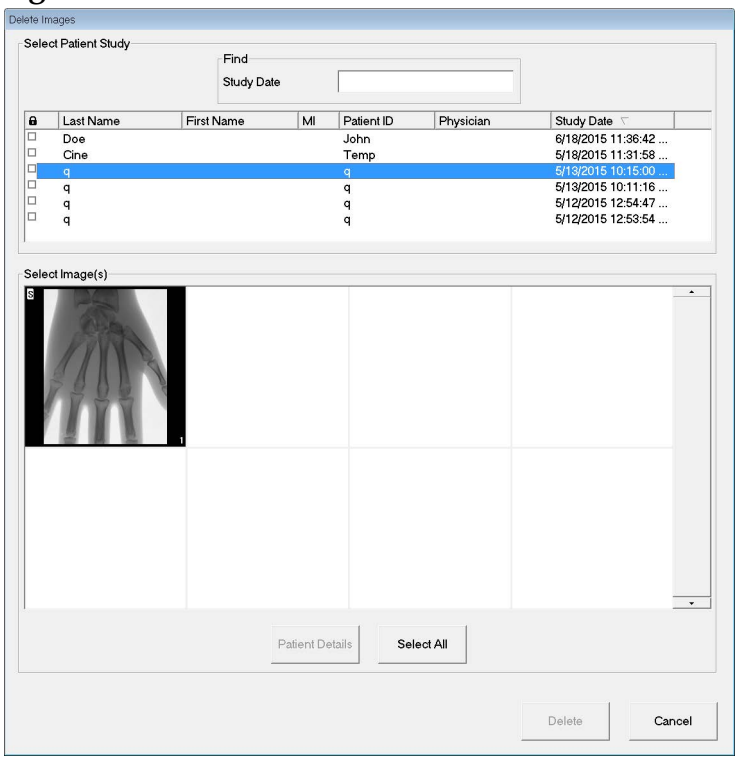
# 13.7 Delete Images Window

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

**Figure 43 Delete Images**



## Figure 44 Patient Selected




## Figure 45 Image Selected for Deletion

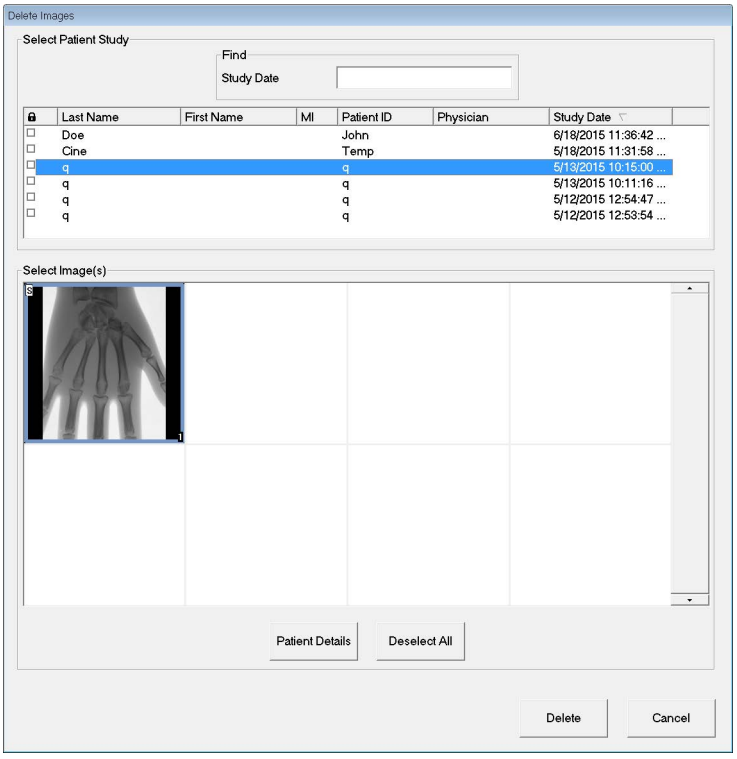


**Table 46 Delete Images Window, Section Descriptions**

| Section | Description |
|---|---|
| **Select Patient Study** | Selection list of all patient/study records on the system and a search criteria section (Find).<br>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.<br>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. |
| **Find** | Use to quickly locate a patient/study. |
| **Select Image(s)** | Images are displayed when one patient/study is selected. Images are not displayed when multiple studies are selected.<br>A selection list of thumbnail images contained in the selected patient/study file.<br>A white box surrounds selected images. Multiple images can be selected. All images can be selected/unselected by clicking **Select All** or **Deselect All**. |

**Table 47 Delete Images Window, Button Functions**

| Button | Function |
|---|---|
| **Patient Details** | Enabled when only one image is selected.<br>Displays patient information. |
| **Select All/ Deselect All** | Selects or deselects all images in the image selection list. |
| **Delete** | 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. |
| **Cancel** | Closes the window without deleting images and returns to the main screen. |

# 13.8 View DICOM Queue Window

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

**Figure 46 View DICOM Queue**

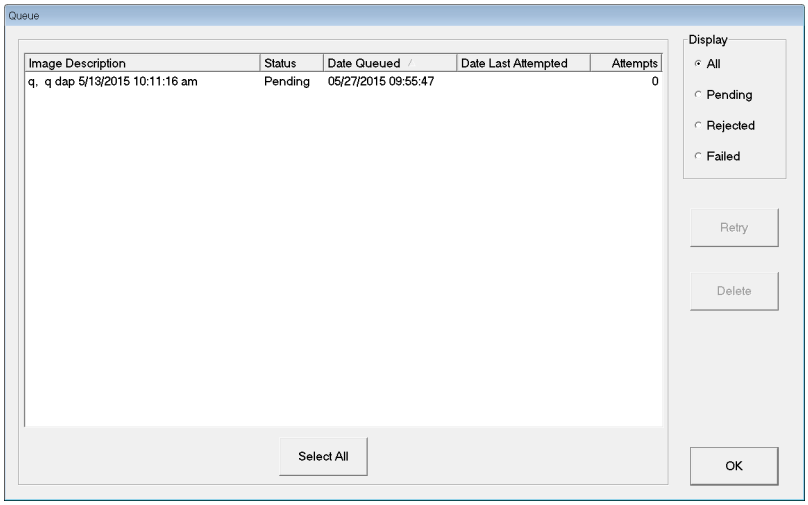



**Table 48 Queue Window, Section Description and Button Functions**

| Section/Button | Description/Function |
|---|---|
| **DICOM Queue List** | Selection list of queue request information that can be filtered. |
| **Display** | Filters the selection list depending on the selected radio button. |
| **Select All/ Deselect All** | Selects or deselects all DICOM requests listed in the Queue List. |
| **Delete** | Deletes the selected DICOM request(s). |
| **Retry** | System tries to send the selected DICOM request(s) again. |
| **OK** | Closes the Queue window and returns to the previous screen (Main Screen or Review Images screen). |

# 14 System Maintenance

## 14.1 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.

## 14.2 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.

## 14.3 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.*

### 14.3.1 Recommended Disinfectants

**Table 49 Recommended Wipes**

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

**Table 50 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** | |

## 14.4 Preventive Maintenance

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

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