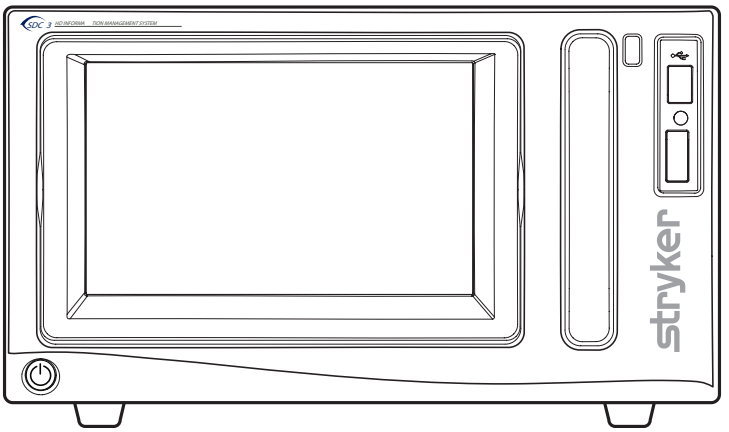
stryker®

SDC3

HD Information Management System

REF 0240060100



CE 0197 Rx ONLY

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Warnings and Cautions

Please read this manual and follow its instructions carefully. The words warning, caution, and note carry special meanings and should be carefully reviewed:
Warning: Indicates risks to the safety of the patient or user. Failure to follow warnings may result in injury to the patient or user..
Caution: Indicates risks to the equipment. Failure to follow cautions may result in product damage.
Note: Provides special information to clarify instructions or present additional useful information.

1. Caution: Federal law (United States of America) restricts this device to use by, or on order of, a physician.
2. Read this operating manual thoroughly and be familiar with its contents prior to setting up or using this equipment.
3. Carefully unpack the unit and check for any damage that may have occurred during shipment. If damage is detected, contact your Stryker representative.
4. Use of this device is restricted to qualified health care professionals who have a complete knowledge of the use of this equipment and the devices to which it can be connected.
5. Test this equipment prior to using it in a surgical procedure. This unit was fully tested at the factory before shipment; however, it must be tested for proper function in the environment and setup configuration in which it will be used.
6. To avoid risk of electric shock, use only a hospital-grade power cord furnished with the unit. Disconnect the unit from the power supply to make connections or to inspect the equipment.
7. Install this device in an operating room that complies with all applicable IEC, CEC, and NEC requirements for safety of electrical devices. Any installation or connection with other devices shall be evaluated for electrical safety according to the IEC 60601-1:2005 +Corr 2006 +Corr 2007 standard.
8. Use only clean, dry, undamaged Stryker brand media. The use of damaged, wet, or incompatible media will void the warranty and may result in the malfunctioning of this equipment.
9. Ensure that all equipment connected to the SDC3 is properly grounded (and isolated, if required).
10. To avoid risk of fire, do not use this device in the presence of flammable anesthetics.
11. Avoid direct exposure to the laser beam of the DVD/CD drive as it may harm the eyes.
12. Pay close attention to the care and cleaning instructions in this manual. Failure to follow these instructions may result in product damage.
13. Attempt no internal repairs or adjustments not specifically detailed in this operating manual. Refer any adjustments, modifications, and/or repairs to Stryker Endoscopy or its authorized representatives.
14. This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

The Stryker Standard Warranty and Return Policy (1000401175) is void if any of these warnings or cautions are disregarded.

About Your Product

Product Description

The SDC3 is a computer-based unit that records, manages, and archives digital images and videos of surgical procedures. The SDC3 simplifies file management by recording surgical photos and videos to compact digital media, such as CDs, DVDs, Compact Flash Cards, USB Hard Drive, or USB storage devices, which can then be viewed from a personal computer, a DVD player, or from the SDC3 itself. The SDC3 records images and videos on a built-in hard drive, where they can be easily accessed after the surgical procedure. The media stored on the hard drive can be tagged with patient-specific information and burned to digital media using a touchscreen control panel located on the front of the unit. This media can also be sent at the push of a button to the Studio3 Media Server for long-term storage and browser-based accessibility.

Intended Use

The SDC3 is intended to electronically capture, transfer, store and display medical device data independently of the functions or parameters of any connected medical device. It is also intended to convert medical device data from one format to another in accordance with preset specifications. The SDC3 is intended for use as a secondary display for regulated medical devices and is not intended to calculate or modify any received data or provide primary diagnosis or treatment decisions. It is not intended for use for active patient monitoring.

The SDC3 is a non-sterile reusable device not intended for use in the sterile field. The SDC3 is intended for use by qualified physicians and qualified operating room personnel who have complete knowledge of surgical procedures.

Indications

The SDC3 is indicated for use with compatible endoscopic and general surgery devices. The SDC3 can be used in general laparoscopy, nasopharyngoscopy, ear endoscopy, sinuscopy, and plastic surgery wherever a laparoscope/endoscope/arthroscope is indicated for use.

A few examples of the more common endoscopic surgeries are laparoscopic cholecystectomy, laparoscopic hernia repair, laparoscopic appendectomy, laparoscopic pelvic lymph node dissection, laparoscopically assisted hysterectomy, laparoscopic and thoracoscopic anterior spinal fusion, anterior cruciate ligament reconstruction, knee arthroscopy, shoulder arthroscopy, small joint arthroscopy, decompression fixation, wedge resection, lung biopsy, pleural biopsy, dorsal sympathectomy, pleurodesis, internal mammary artery dissection for coronary artery bypass, coronary artery bypass grafting where endoscopic visualization is indicated, and examination of the evacuated cardiac chamber during performance of valve replacement.

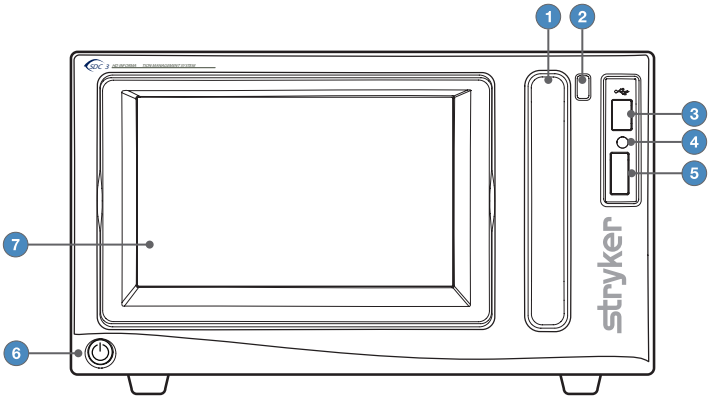
SDC3 users are general surgeons, gynecologists, cardiac surgeons, thoracic surgeons, plastic surgeons, orthopedic surgeons, ENT surgeons, and urologists.

Contraindications

There are no known contraindications.

System Overview

Front Panel

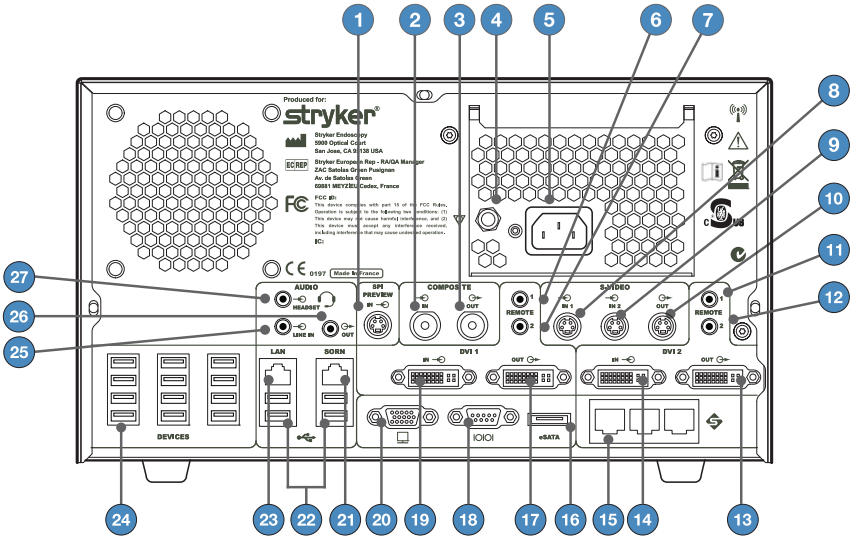


1. CD/DVD Drive
2. Eject button for CD/DVD Drive
3. USB Port
4. Token LED (for use with WiSe Receiver)
5. Token Slot (for use with WiSe Receiver)
6. Power Button
7. LCD Touchscreen

Notes:

- **Digital Capture functions are not available on the SDC3 when controlled with the SIDNE system.**
- **SDC3 files are not readable on the SDC Ultra. SDC Ultra files can be read on SDC3.**

Rear Panel



1. SPI Preview – SPI Input (For future use)
2. Comp In – Composite Video Input
3. Comp Out – Composite Video Output
4. Equipotential Ground Plug – For connection to an external protective earthing system as described in the IEC 60601-1 Electrical Safety standard
5. AC Power Inlet
6. Primary R1 – Remote connection for capture control on the primary channel
7. Primary R2 – Remote connection for recording control on the primary channel
8. S-Video IN1 – S-Video Input 1
9. S-Video IN2 – S-Video Input 2
10. S-Video Out – S-Video Output
11. Secondary R1 – Remote connection for capture control for secondary channel
12. Secondary R2 – Remote connection for recording control for secondary channel
13. DVI 2 Out – Secondary Channel DVI Output
14. DVI 2 In – Secondary Channel DVI Input
15. SFB Connector Ports – Enables Firewire connection with Stryker Firewire devices
16. eSATA – Compatible eSATA Cable Port (For future use)
17. DVI 1 Out – Primary Channel Output
18. Serial Port
19. DVI 1 In – Primary Channel Input
20. VGA
21. SORN – RJ45 SORN Port
22. USB Ports for mouse, keyboard, printer
23. RJ45 Port – Network Port
24. Devices – Stryker Devices Port
25. Line-In – Audio Input

26. Line-Out – Audio Output
27. Headset – Audio In/Headset Out

Setup

Stryker Endoscopy considers instructional training an integral part of the SDC3 system. Your Stryker Endoscopy sales representative will perform at least one in-service at your convenience to help you set up your equipment and instruct you and your staff on its operation and maintenance. Please contact your local Stryker Endoscopy representative to schedule an in-service after your equipment has arrived.

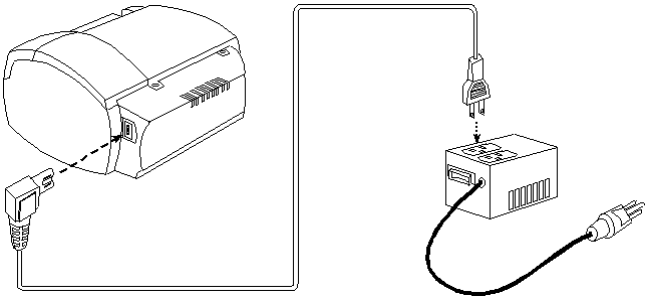
1. Choose a location for the SDC3
   - Place the SDC3 on a Stryker cart or other sturdy platform.
   - Provide at least four to six inches of space around the sides and top of the SDC3 to ensure proper ventilation and allow access to the power cord.

> ⚠ **Warning**
>
> RF and other mobile communications equipment may affect the normal function of the SDC3. When placing the SDC3, follow the instructions located in the "Electromagnetic Compatibility" section of this manual.

2. Connect peripheral devices according to the interconnection diagram on the following pages.

> ⚠ **Warnings**
>
> - Connect only devices that have been specified as part of, or compatible with, the SDC3 system.
> - When the SDC3 is interconnected with other electrical devices, leakage currents may be additive, resulting in electromagnetic emissions that can interfere with the normal function of electronic medical equipment. To properly control electromagnetic emissions and avoid potential harm to the patient or user, ensure all electrical devices are installed and interconnected according to the requirements of IEC 60601-1 and IEC 60601-1-1.
> - When installed inside the patient environment, represented by an area 1.5 meters from the patient in all directions, the printer must be connected to an isolation transformer prior to use. Recent Stryker carts include isolation

transformers and printers can be installed without the use of an additional transformer. Please contact your Stryker Endoscopy sales representative to determine if your cart includes this feature.



3. Connect the AC power.
   - Connect the provided hospital power cord to the AC inlet on the rear console panel.
   - Connect the other end to a hospital-grade power outlet.
   - Use a hospital power cord, part number 0105033001 or part number 0105150027.

> ⚠ **Warning**
>
> - Check the power cord assembly periodically for damaged insulation or connectors.
> - To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

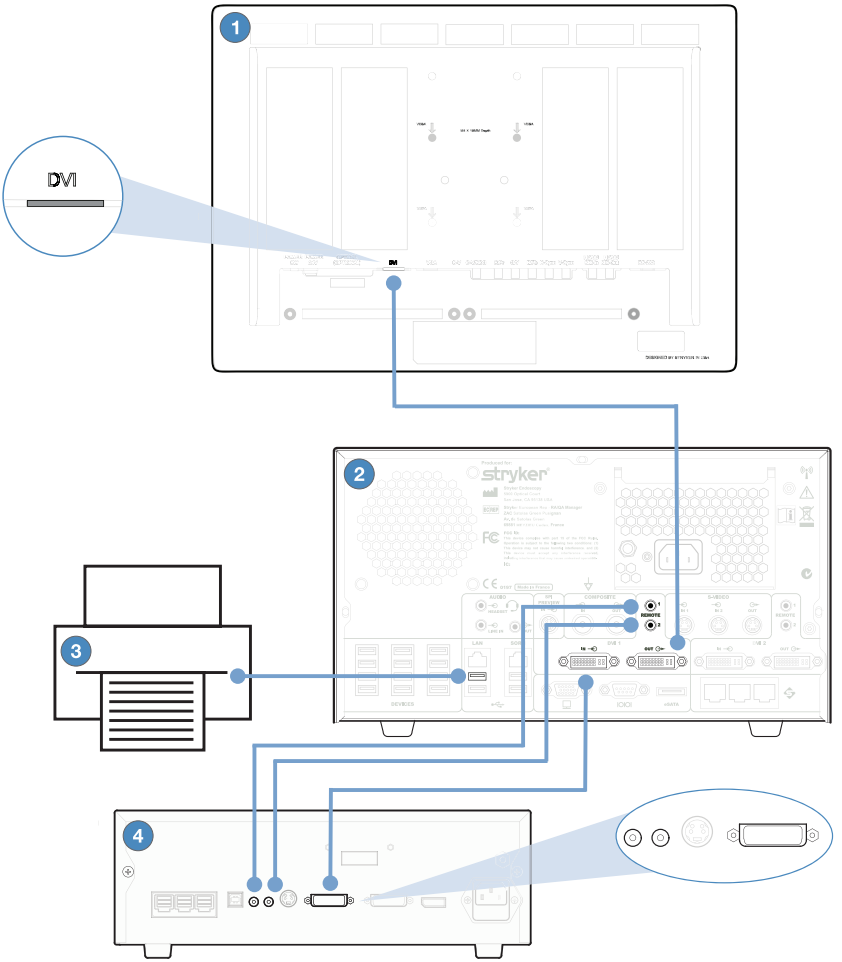
4. (Optional) Connect the equipotential ground probe to an equipotential bus bar (if available). The ground probe is provided to ensure all devices installed on the cart are connected to the same ground potential. Ensure all connections are made according to the requirements of IEC 60601-1.
5. (Optional) Connect the SDC3 to the WiSe Receiver.
   - Insert the LED token provided with the WiSe receiver into the token slot on the front of the SDC3 console according to the sequence of steps described in the WiSe receiver user guide.
   - When the LED light is off, no link is active, and the token can be inserted to begin synchronization.
   - When the LED light displays green, the link is active, and it is okay to remove the token.
   - When the LED light displays amber, the system is busy and the token should not be inserted or removed.

Note: The SDC3 can only be linked to one WiSe Receiver.

Warning

In the event of power loss, all DVI output signals routed from the SDC3 to the surgical display will be lost. Analog signals (RGBHV, S-Video, Composite) will not be affected by power loss, and can therefore be used as backup video signals if they have been connected prior to power loss.

Basic Setup



1. WiSe 26" Monitor
2. SDC3
3. Printer
4. 1288 Camera Control Unit

Getting Started

Powering the SDC3 On and Off

- To power on the SDC3 console, press the power button located at the bottom left corner of the front panel. The button will shine green when the system is powered on.
- To power off the system, press the power button again and wait for the LED to turn off.
- As the system starts up, the SDC3 will display the Stryker logo, a black screen, then the following screen. After a user is selected, the system will say, "Greetings. One moment please. SDC Ready. Digital Capture Initializing."

1. The version of the SDC3 software appears beneath the SDC3 logo.
2. Loading progress displays at the bottom of the screen.

Selecting a User Account

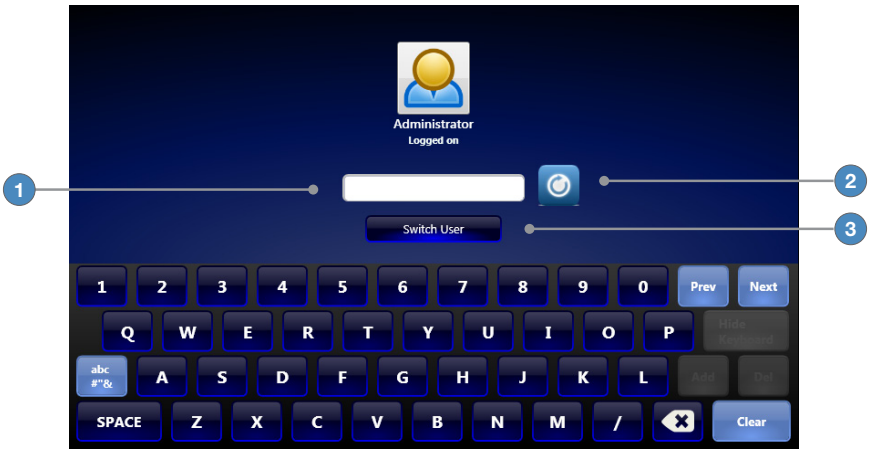
After startup, the User Accounts screen will appear if there are multiple user accounts saved in the SDC3 system.

1. Select the desired user account by touching the corresponding icon.
2. Markers at the bottom of each screen show the current screen and total number of screens.
3. To view additional user account screens, touch the button.

Logging In as the System Administrator

The System Administrator account can be accessed from the User Accounts Screen.

- If the account is not password protected, the SDC3 will proceed to the Home Screen.
- If the account is password protected, the login screen will appear:

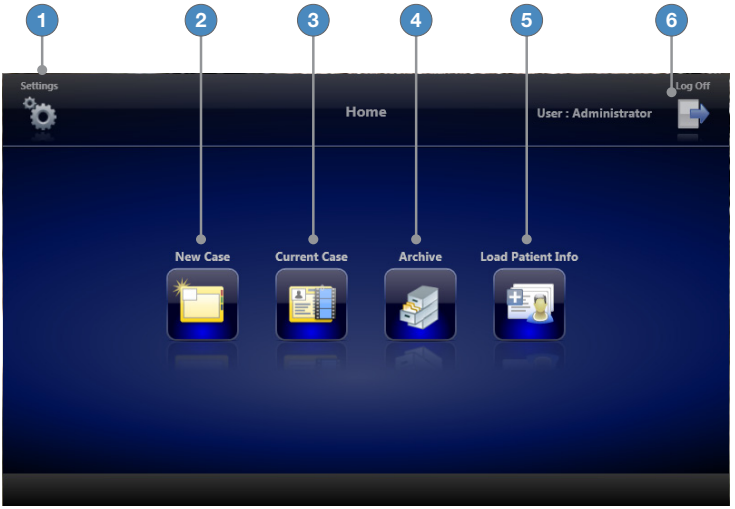


1. Enter the account password in password field.
2. After password is entered, press the **LOGIN** button. After successful login, the system will display the Home screen.
3. To return to the User Accounts screen, press the **SWITCH USER** button.

The Home Screen

After selecting a user account or logging in as the system administrator, the Home Screen is displayed. The Home Screen provides links to the major functions of the SDC3. From the Home Screen, you can

- start a new patient case
- access current patient cases
- access archived patient information
- load patient information into the system
- adjust system settings



1. Pressing the **SETTINGS** button will navigate to the SDC3 Settings screens.
2. Pressing the **NEW CASE** button will begin a new patient case.
   - If a patient case has already been started, but there is no data saved to that case, the system will confirm, "Do you wish to discard the current case?"
   - If a patient case has already been started, and there is data saved to that case, the system will confirm, "Do you wish to create a new case?"
   - Pressing will navigate back to the Home screen. Pressing will navigate to the New Case screen.
3. Pressing the **CURRENT CASE** button will navigate to the Current Case screen.
4. Pressing the **ARCHIVE** button will navigate to the Archived Cases screen, which displays cases that have been saved to the SDC3, a USB storage device, a disc, or the Studio3 media server.
5. Pressing the **LOAD PATIENT INFO** button will navigate to the Patient Info screen to preload patient information before surgery.
6. Pressing the **LOG OFF** button will log off the current user. The Login screen will reappear.

Creating Patient Cases

The SDC3 organizes all the data associated with a patient into a patient "case." Patient cases include information about the patient, the procedure, and any pictures or video captured during the procedure. Patient cases can be created, accessed, modified, and saved to the SDC3 hard disk or to external media, such as USB drives, CD/DVD, or network servers.

Creating a New Patient Case

To create a new patient case:

1. On the Home screen, press the **NEW CASE** button.
2. From the confirmation screen, press to confirm the new case and proceed to the Capture Screen.

Note: If a patient case has already been started, the SDC3 will ask if you want to discard that case (the "current case") before creating a new case. Discarding the case will erase any data associated with that case. If you do not wish to discard the current case, you can access it through the CURRENT CASE button from the Home screen.

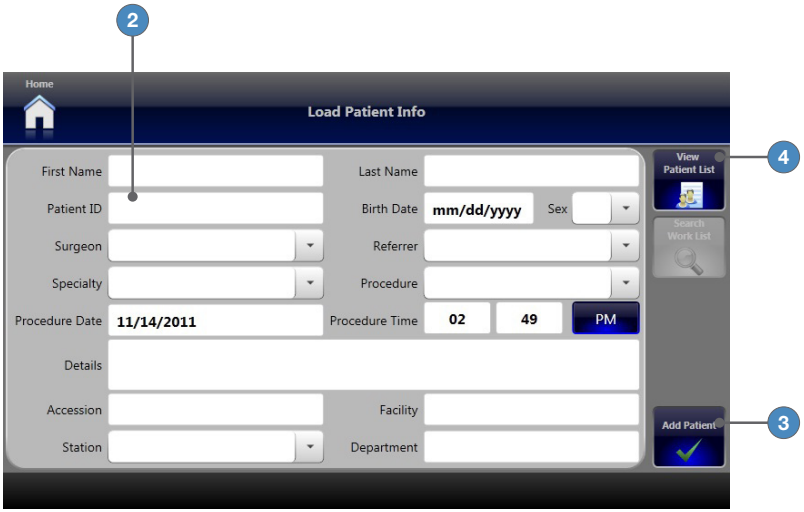
Accessing a Current Patient Case

To access a current patient case (one for which patient data, pictures, or video has already been saved to the SDC3):

1. On the Home screen, press the **CURRENT CASE** button. The Capture Screen will appear.
2. On the Capture Screen, select the desired patient case from the **CURRENT CASE (PATIENT ID)** dropdown list.

Loading Patient Information

Patient information (name, ID, procedure, etc.) can be pre-loaded into the system so it will be available when creating new patient cases. The patient information entered and saved in the Load Patient Info screen becomes available as a Current Case in the dropdown menu on the Capture screen.

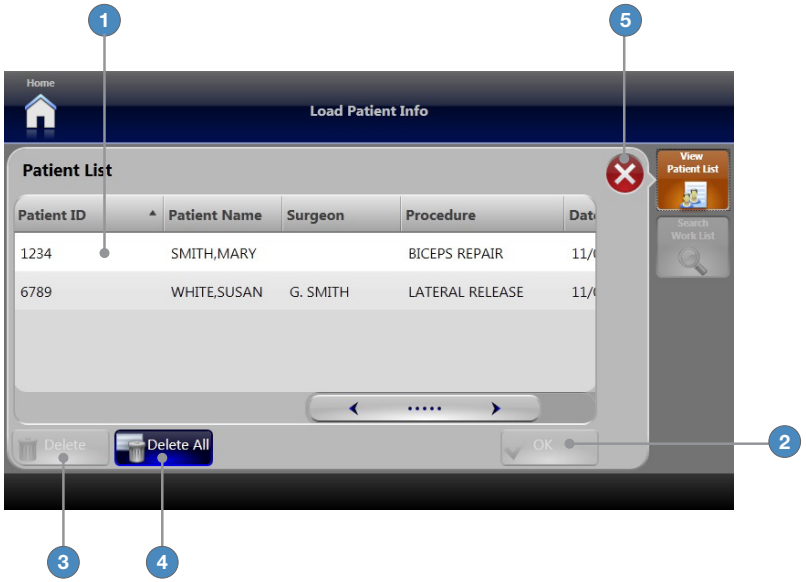


To load patient information into the SDC3:

1. On the Home Screen, press the **LOAD PATIENT INFO** button. The Load Patient Info screen will appear.
2. Populate the desired data fields.
   - Touch the desired field to open a keyboard for typing in data, or
   - Select a value from the dropdown list.
   - At a minimum, the Patient ID field should be populated. All other fields are optional.
3. Press the **ADD PATIENT** button to save the patient information and add the patient to the current case list.
4. To view patients currently loaded into the system, press the **VIEW PATIENT LIST** tab.

Viewing the Patient List

The Patient List screen displays patient cases that have already been loaded into the system.



1. To select a case for editing or deletion, touch the corresponding row.
2. To view or edit the selected case, press the **OK** ✓ button.
3. To delete the selected case, press **DELETE** button.
4. To delete all cases, press the **DELETE ALL** button.
5. To return to the Load Patient Info screen, press the button.

Capturing Images and Videos

Within a patient case, image and video files can be captured to document a surgical procedure. To open the Capture screen for a patient case, select a **NEW CASE** or **CURRENT CASE** from the Home screen.

Capturing Images and Video from a Single Channel

The Capture screen displays the live image from the camera. The live image can be recorded as video or captured as a still image.

Note: At least one video source (channel) must be connected to the SDC3 to enable video recording and image capture.

To record video:

1. Press **RECORD** to initiate recording.
   Press **PAUSE** to pause recording. Video recording duration, video source signal, and video size are displayed above the preview screen.
2. Press **STOP** to stop recording.

To stream live video:

3. Ensure the **STREAM 1** checkbox is checked. (Streaming must be enabled/configured in the **NETWORK STREAM** tab in System Settings. See the "Network Streaming Settings" section of this manual for details.)
4. Press the **STREAM** button to toggle between start and stop.

To capture images:

5. Press the **IMAGE CAPTURE** button.
6. The total number of captured images displays next to the preview screen and again at the base of the Capture screen.

To print captured images:

7. Press the **PRINT** button.

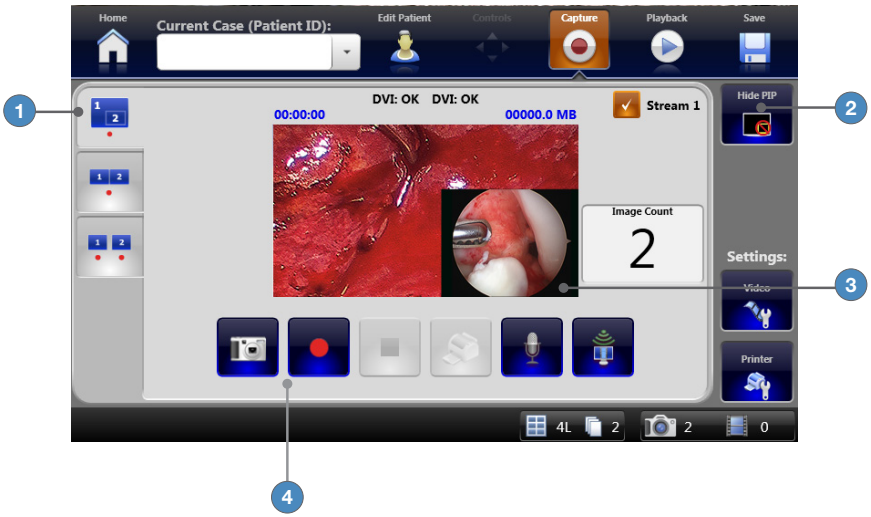
Additional functions:

8. If a microphone is connected to the SDC3, pressing the **MICROPHONE** button will toggle between mute and unmute audio input while recording.
9. The **SINGLE CHANNEL/PIP** tab accesses the Single Channel capture screen. (Additional tabs appear when a second video source is connected to the SDC3).

Recording Picture-in-Picture Images and Video

When two video sources are connected to the SDC3, the system can display Picture-in-Picture (PIP) video. In PIP mode, video from Channel 2 appears in the lower corner of the Channel 1 screen. The SDC3 records images and videos from both sources as one file.

Note: Dual Channel mode must be selected in the General Application settings to enable this function.



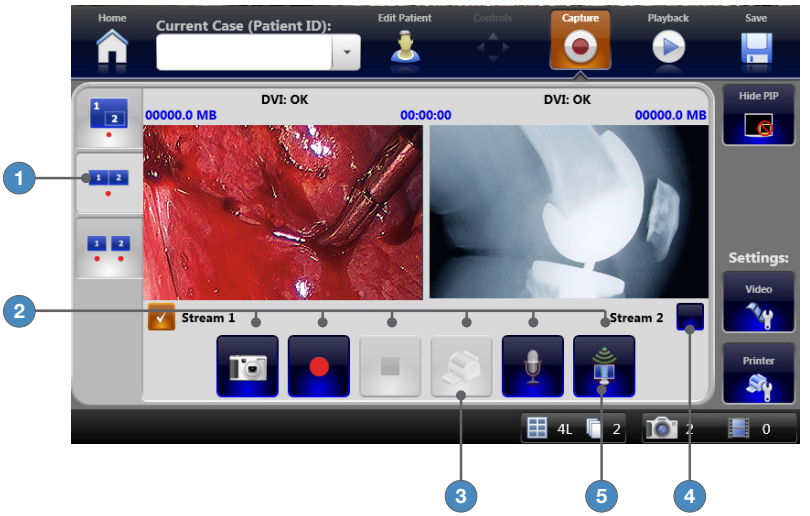
To record PIP video or capture PIP images:

1. Select the **PIP** tab.
2. Press the **HIDE/UNHIDE PIP** button.
3. The picture from Channel 2 will appear as a picture in the corner of the Channel 1 screen.
4. Use the **RECORD** , **PAUSE** , **STOP** , and **IMAGE CAPTURE** buttons to record video or capture images.

Synchronized Video Recording of Dual Channels

When two video sources are connected to the SDC3, the system can record synchronized video from both video sources. In Synchronized Capture mode, images and video are captured simultaneously from both channels, but saved as separate files.

Note: Dual Channel mode must be selected in the General Application settings screen to enable this function.



To record synchronized video from dual channels:

1. Select the **SYNCHRONIZED CAPTURE** tab.
2. Press the **CAPTURE**, **RECORD**, and **STOP** buttons under the preview pane to perform the corresponding function.
3. Press the **PRINT** button to print images. When printing from the Synchronized Capture screen, by default, images from Channel 1 will be printed first and images from Channel 2 will be printed second.

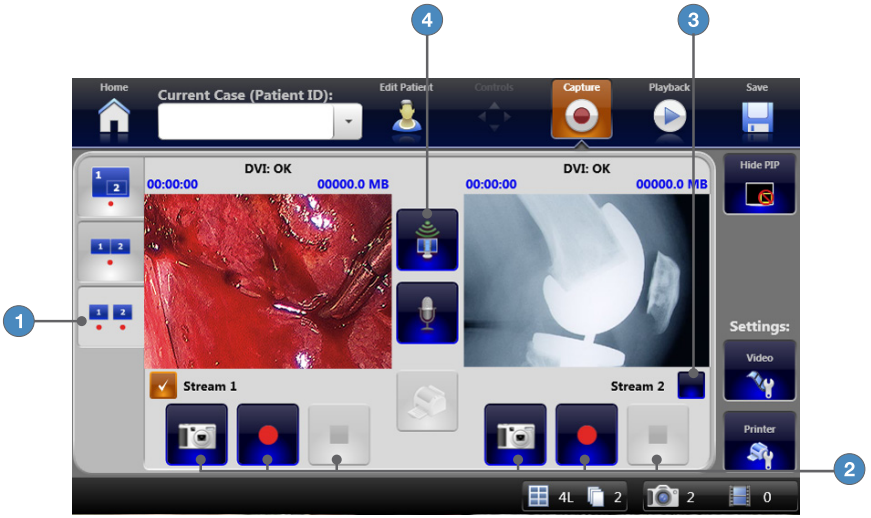
To stream Dual Channel video:

4. Select the Stream 1 checkbox to stream Channel 1 video, or the Stream 2 checkbox for Channel 2.
5. Press the **STREAM** button to start/stop streaming.

Independent Video Recording of Dual Channels

When two video sources are connected to the SDC3, the system can record independent video from both video sources. In Dual Capture mode, images or video can be captured from Channel 1 and Channel 2 independently of each other and saved as separate files.

Note: Dual Channel mode must be selected in the General Application settings to enable this function.



To record video or capture images from dual channels:

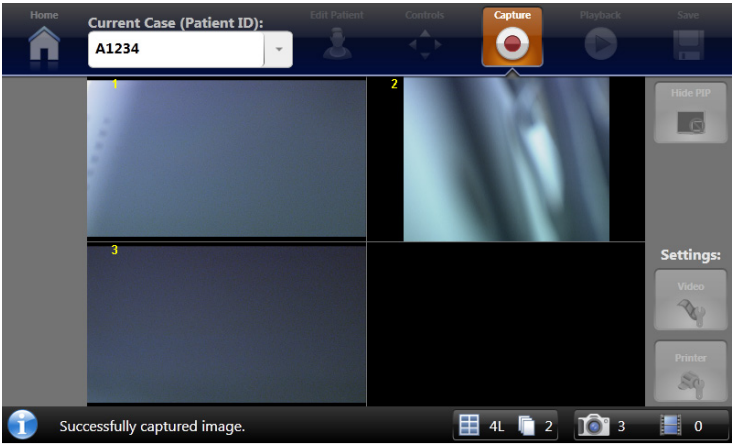
1. Select the **DUAL CAPTURE** tab to display images from both channels with independent capture controls.
2. Press the **CAPTURE**, **RECORD**, and **STOP** buttons under the respective preview pane to perform that function for the corresponding channel.

To stream dual channel video:

3. Select the Stream 1 checkbox to stream Channel 1 video, or the Stream 2 checkbox for Channel 2.
4. Press the **STREAM** button to start/stop streaming.

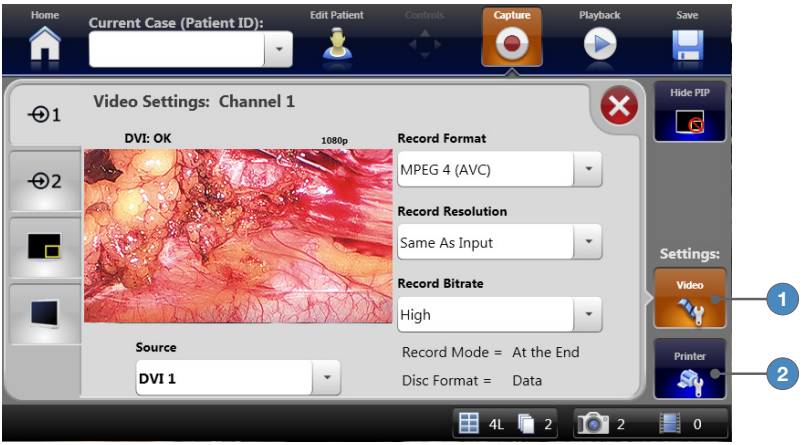
The Flip Screen

When images are captured, the SDC3 displays the most recent captured images in a "flip" screen. The images appear on the SDC3 screen and the surgical display for several seconds before the SDC3 "flips" back to the capture screen.



Video and Printer Settings

From the Capture screen, video and printer settings can be accessed to adjust the system according to user preference.



1. Pressing the **VIDEO** tab displays options for video settings.
2. Pressing the **PRINTER** tab displays options for printer settings.

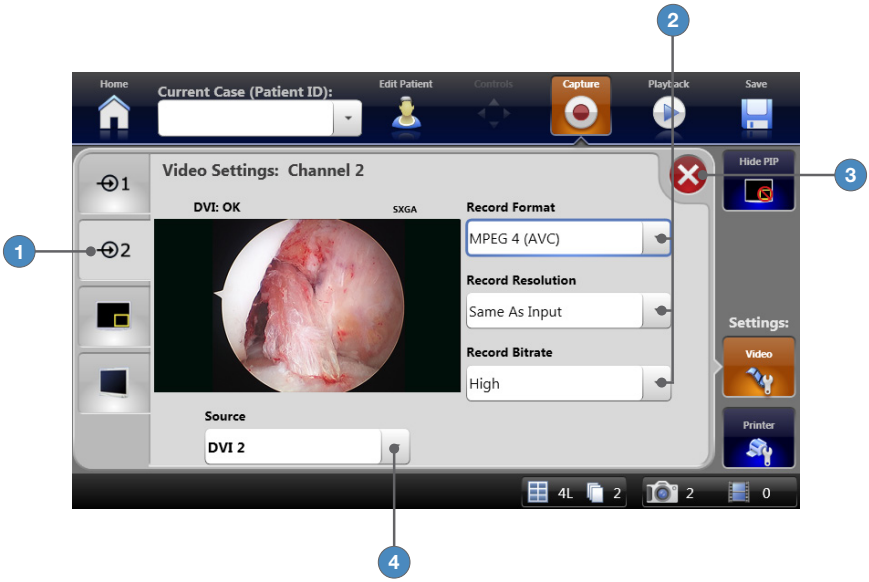
Video Settings: Channel 1

Channel 1 video settings are accessible from the **VIDEO SETTINGS** tab.

1. Pressing the **CHANNEL 1** ⊖1 tab displays the "Video Settings: Channel 1" screen.
2. The drop-down menus display selections for Recording Format, Record Resolution, and Record Bitrate.
3. Pressing the ⊗ button closes the settings screen and returns to the Capture screen.
4. Recording mode and disc format settings for Channel 1 are displayed here. These settings are selected in the General Settings screen, accessible from the Home Screen.
5. The drop-down menu displays available selections for video sources, based on what is connected to the SDC3.

Video Settings: Channel 2

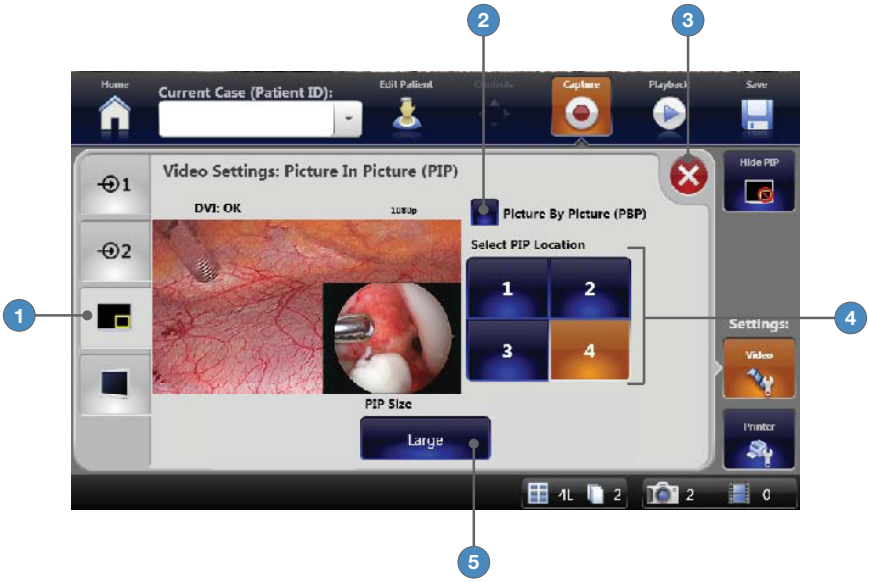
Channel 2 video settings are accessible from the **VIDEO SETTINGS** tab.



1. Pressing the **CHANNEL 2** ⊖2 tab displays the "Video Settings: Channel 2" screen. By default, Channel 2 recording mode is ATE, and disc format is the same as selected for Channel 1.
2. The drop-down menus display selections for Recording Format, Record Resolution, and Record Bitrate.
3. Pressing the ⊗ button closes the settings screen and returns to the Capture screen.
4. The drop-down menu displays available selections for video sources, based on what is connected to the SDC3.

Video Settings: Picture-in-Picture

Picture-in-Picture settings are accessible from the **VIDEO SETTINGS** tab.



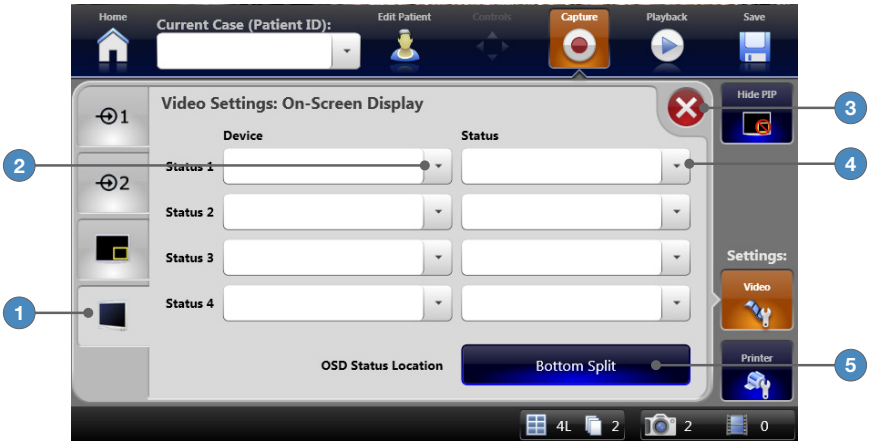
1. Pressing the **PIP** tab displays to the "Video Settings: Picture in Picture (PIP)" screen.
2. The Picture by Picture (PBP) checkbox can be selected to view video inputs adjacent to each other in the main preview screen. The PIP Size, and Select PIP Location options will be disabled if PBP is selected.
3. Pressing the button closes the settings screen and returns to the Capture screen.
4. Pressing one of the numbers selects in which quadrant of the main picture the PIP will appear.
5. Pressing the **PIP SIZE** button toggles between Small, Medium and Large.

Picture-By-Picture

1. When the Picture by Picture checkbox is selected, video inputs appear adjacent to each other in the main preview screen. The PIP Size, and Select PIP Location options will be disabled.

Video Settings: On-Screen Display

On-Screen Display settings are accessible from the **VIDEO SETTINGS** tab.

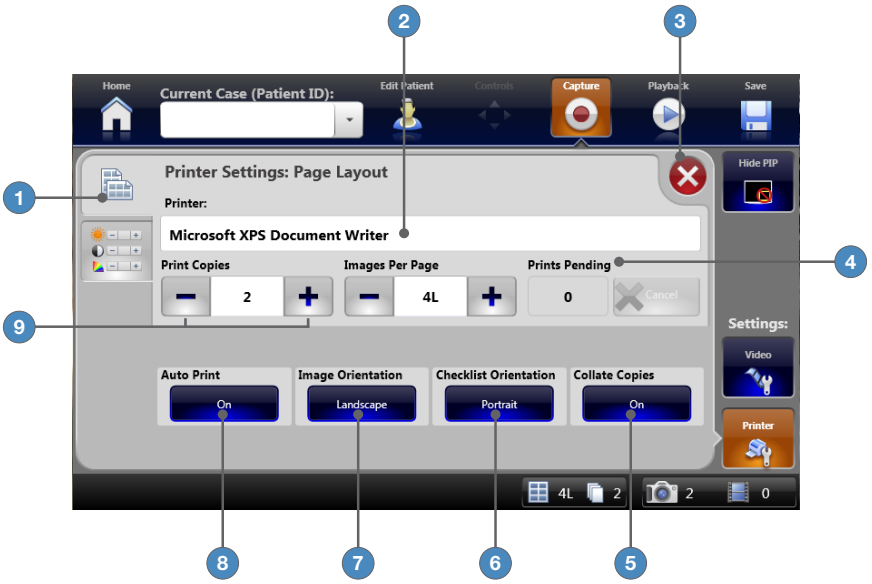


1. Selecting the **ON-SCREEN DISPLAY** tab from the Video Settings Screen will display the "Video Settings: On-Screen Display" screen.
2. The Device drop-down menus display selections of which devices' status will appear on the surgical display.
3. Pressing the button closes the settings screen and returns to the Capture screen.
4. The Status drop-down menus display status and command selections for the selected devices.

5. Pressing the **OSD STATUS LOCATION** button toggles between options for where device status messages will appear on the surgical display.

Printer Settings: Page Layout

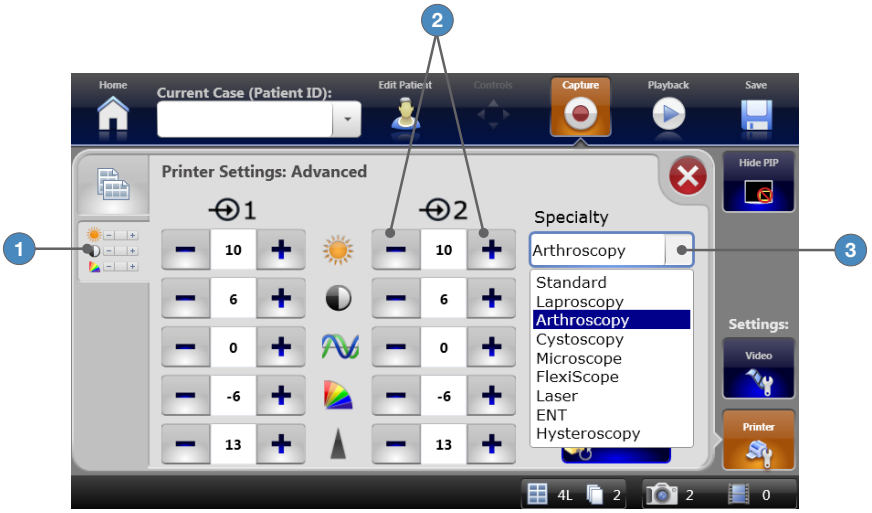
Page Layout settings are accessible from the **PRINTER SETTINGS** tab.



1. Selecting the **PAGE LAYOUT** tab displays the "Printer Settings: Page Layout" screen.
2. The name of the connected printer appears here.
3. Pressing the button closes the settings screen and returns to the Capture screen.
4. The Prints Pending window displays the number of images ready to be printed. Pressing the **CANCEL** button cancels a pending print job.
5. Pressing the **COLLATE COPIES** button toggles between On and Off.
   Note: When viewing the status of shaver handpieces, only the status of the first connected handpiece will appear on the surgical display.
6. Pressing the **CHECKLIST ORIENTATION** button orients printouts of the Surgical Timeout Checklist. Choose between Portrait and Landscape.
7. Pressing the **IMAGE ORIENTATION** button orients image printouts. Choose between Portrait and Landscape.
8. Pressing the **AUTO PRINT** button toggles between On and Off. When Auto Print is On, the print job will start as soon as the required number of images is captured.
9. The +/– buttons adjust the number of copies printed, and how many images print per page.

Printer Settings: Advanced

Advanced printer settings are accessible from the **PRINTER SETTINGS** tab.



1. Selecting the **ADVANCED SETTINGS** tab navigates to the "Printer Settings: Advanced" screen.
2. The +/– buttons adjust the following settings for Channel 1 and Channel 2: Brightness, Contrast, Phase, Chroma, Sharpness
3. The dropdown menu lists specialty selections, which calibrate printer settings for images from specific surgical specialties.
4. Pressing the **PRINT** button prints the selected images from the current case.
5. Pressing the **RESET** button restores default settings.

Saving Images and Videos

Images and video can be saved to any of the following locations:

- SDC3 built-in hard disk
- Disc (CD or DVD)
- USB drive
- Network locations

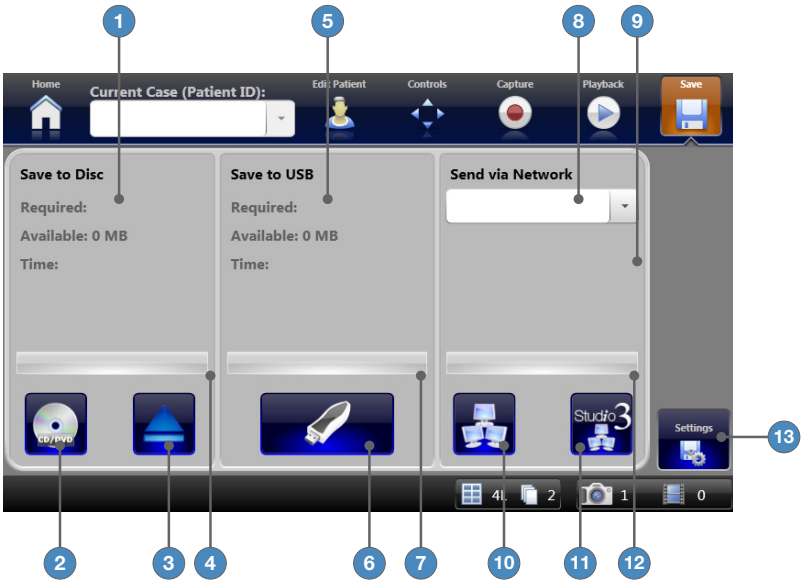
1. All images and video are saved automatically to the SDC3 built-in hard disk. To save them to external media, choose the appropriate destination from the Save screen. The Save screen is accessible by pressing the **SAVE** button at the top of the SDC3 display.

Selecting the Save Location

The Save screen is divided into three columns for saving images and video to external media:

- Save to Disc
- Save to USB
- Send via Network

Images and video can be saved to different media simultaneously.



To save to disc (CD or DVD):

1. The Save to Disc column displays the space required to save a selected image or video, the space available on the CD or DVD and the time elapsed in the save process.
2. Press the **CD/DVD** button to save the images or video to a writable disc.
3. Press the **EJECT** button to eject the disc when saving is complete.
4. The progress bar displays the status of the write process.

To save to a USB drive:

Note: Video will not save to a USB drive unless "USB" is checked on the Save Settings screen (13). See the "Save Settings" section of this manual for details.

5. The Save to USB column displays the space required to save a selected image or video, the space available on the USB storage device, and the time elapsed in the save process.
6. Press the **USB** button to save the images or video to a USB drive.
7. The progress bar displays the status of the write process.

To save to a Network location:

Note: Video will not save to a Network location unless "Network" is checked on the Save Settings screen (13). See the "Save Settings" section of this manual for details.

8. The Send via Network drop-down menu provides names of available network addresses.

Note: In the Save Settings screen (13), "FTP" or "PACS" must be selected. If "FTP" is selected, the drop-down menu will be populated with IP addresses. If "PACS" is selected, it will be populated with connection names.

9. If "PACS" is selected in Save Settings, the AE Title and IP address of the selected connection will be displayed.
10. Pressing the **NETWORK SAVE** button saves to the selected network. Cases can be saved to another network after the previous save action is completed.
11. Pressing the **STUDIO3** button saves to the Studio3.
12. The progress bar displays the status of the write process.

Other functions:

13. Selecting the **SETTINGS** tab opens the "Save Settings" screen.

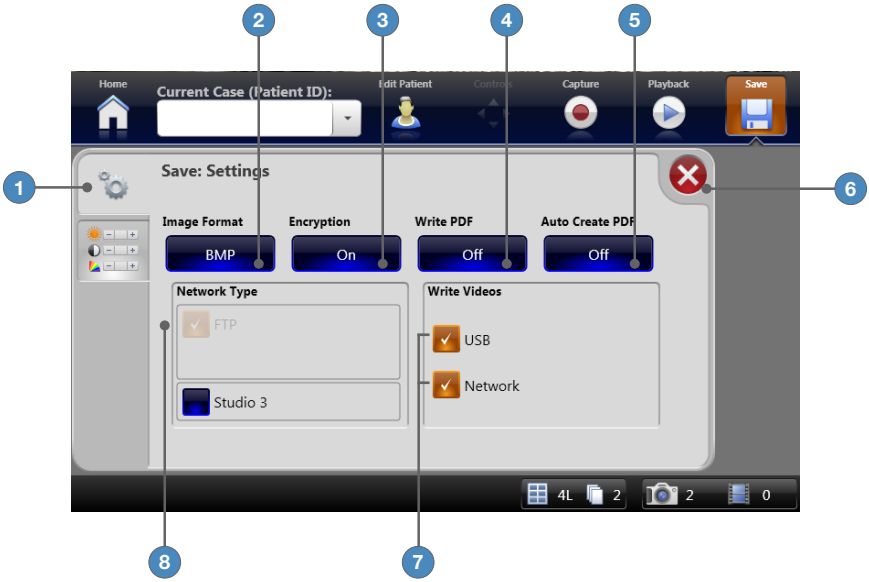
Saving to a Network

When saving to a network location, a login screen will appear.

1. Select the type of network transmission:
   - Secure—for secure transmission of data to the network. Data will be encrypted. A user name and password will be required.
   - Password—for password-protected access to the network. A user name and password will be required.
   - Anonymous—for open access to the network. User name and password are not required.
2. If required (per type of network selected), enter the user name and password.
3. Press **OK.**
4. Press the button to close the login screen.

Save Settings

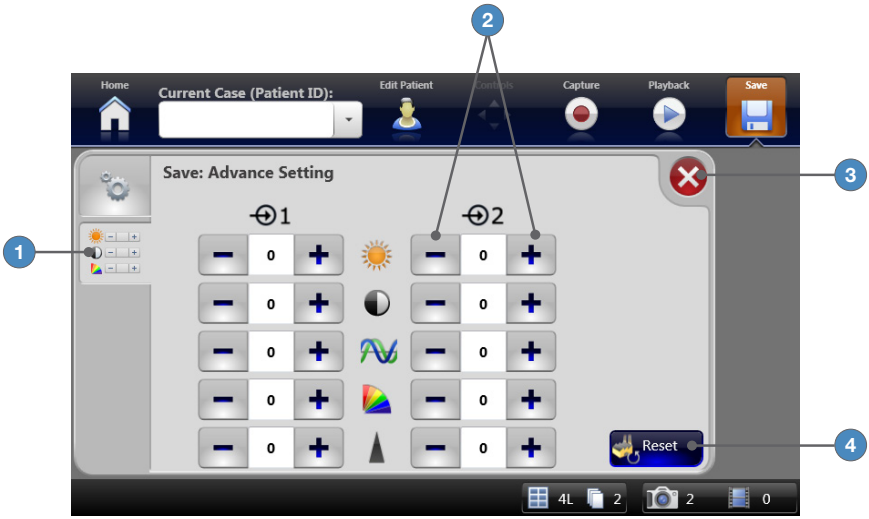
Save settings are accessible though the **SETTINGS** tab on the Save screen.



1. Selecting the **SETTINGS** tab opens the "Save: Settings" screen.
2. Pressing the **IMAGE FORMAT** button selects the format in which pictures will be saved. Choose from BMP, TGA, TIFF, PNG, JPG, JPEG, and JPEG2000.
3. Pressing the **ENCRYPTION** button enables encryption of patient information when saving to external media. Choose between ON and OFF.
4. Pressing the **WRITE TO PDF** button will create a PDF document of selected images whenever you press "Save." Images will print to PDF according to settings selected in "Printer Settings." Choose between ON and OFF.
5. Pressing the **AUTO CREATE PDF** button will automatically create a PDF document of images each time the required number of "Auto Print" images is captured (as defined in the "Printer Settings: Page Layout" screen). Choose between ON and OFF.
6. Pressing the button closes the settings screen and returns to the Save screen.
7. Selecting the checkboxes in the Write Videos window will enable video to be saved to USB or Network locations.
   Note: The Network checkbox will be an option only when FTP is selected in the "Network Type" window.
8. Selecting the checkboxes in the Network Type window defines which type of networks can be saved to.

Advanced Save Settings

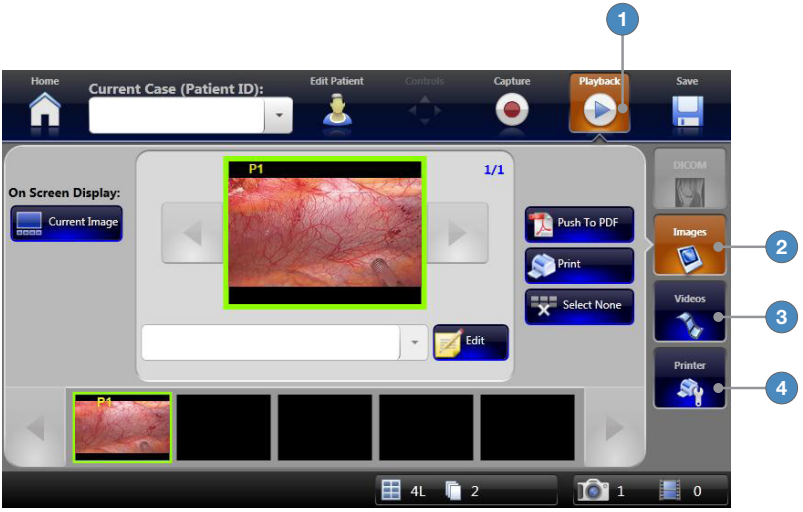
Advanced save settings are accessible though the **SETTINGS** tab on the Save screen.



1. Selecting the **ADVANCED SETTINGS** tab navigates to the "Save: Advanced Setting" screen.
2. The +/– buttons adjust brightness, contrast, phase, chroma and sharpness for images captured on Channel 1 and Channel 2.
3. Pressing the button returns to the Save Settings Screen.
4. Pressing the **RESET** button restores default settings.

Playback of Images and Videos

Captured images and videos can be viewed, played back, annotated, and printed using the Playback screens.



1. The Playback screens are accessible by pressing the **PLAYBACK** tab at the top of the SDC3 display.
2. Image playback is accessible from the **IMAGES** tab.
3. Video playback is accessible from the **VIDEOS** tab.
4. Printer settings are accessible from the **PRINTER SETTINGS** tab. (The **PRINTER SETTINGS** tab is also accessible through the Capture screen.)

Playback of Recorded Images

Within the Playback screen, the **IMAGES** tab on the right side of the screen allows review, annotation, and printing of previously captured images.

To browse images:

1. Pressing the arrows on either side of the center preview screen will scroll through captured images one at a time.
2. Pressing the arrows on either side of the bottom row of images will scroll through the album five images at a time.
3. Double-tapping an image from the bottom panel of images will display it on the center preview screen. Each image is identified in the top left corner by the channel and order in which it was captured. Primary channel images are identified with a "P" and Secondary channel images are identified with an "S."

To view images on the surgical display:

4. Pressing the **CURRENT IMAGE** button will display the image from the center preview screen on the surgical display. Or,
5. Double-tapping the image from the center preview screen will display the image on the surgical display.

To select images:

6. Pressing any image will select it. Selected images are identified by a green border. An image can be deselected by pressing it again.
7. Pressing the **SELECT NONE** button toggles between Select All and Select None to select or deselect all images in the album.

To print images:

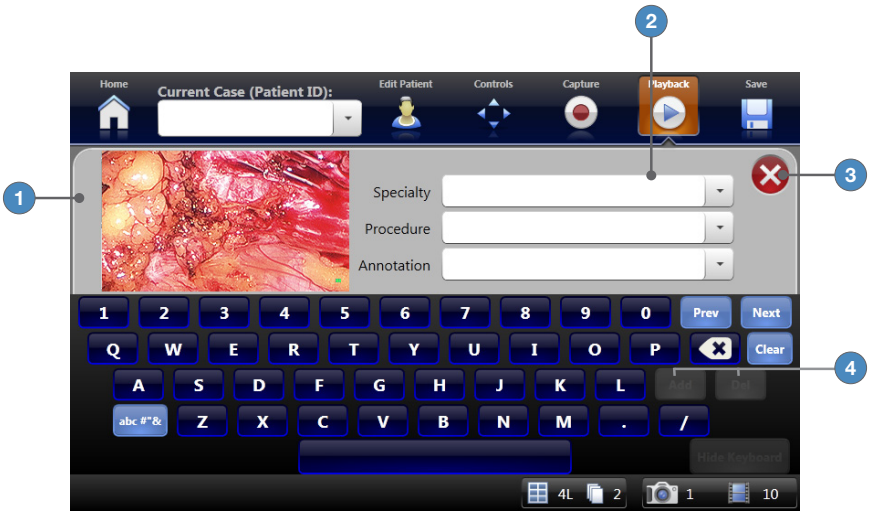
8. Pressing the **PUSH TO PDF** button generates a PDF of the selected images. An information message box will display while the PDF is processing.
9. Pressing the **PRINT** button prints the selected images. If no printer is connected, a warning message will display in the status bar at the bottom of the screen.

To annotate images:

10. The dropdown menu lists annotation selections. Pressing the **EDIT** button will display the Edit Annotation screen.

Editing Image Annotations

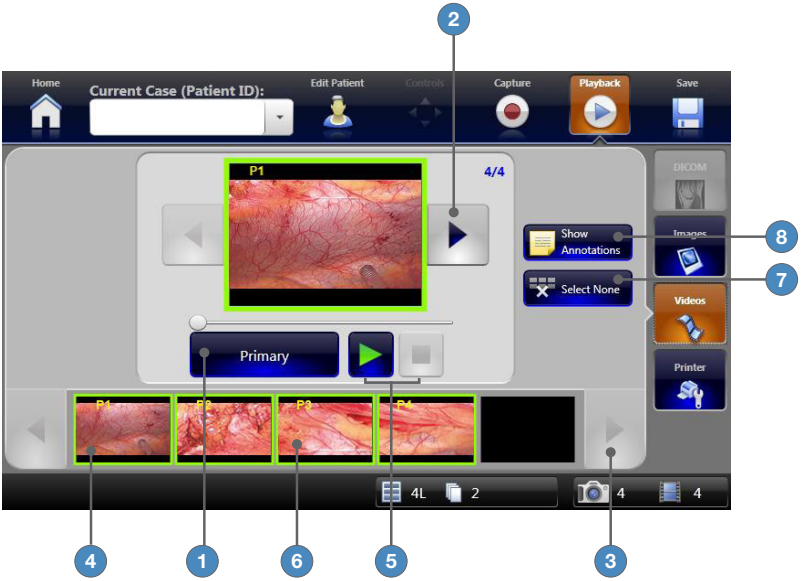
Annotations can be assigned or edited for images selected in the Playback screen.



1. The Edit Annotations screen will display when the **EDIT** button is selected in the Images Playback screen.
2. The drop-down menus display selections for Specialty, Procedure, and Annotation.
3. Pressing the button closes the Edit Annotations screen and returns to the Images Playback screen.
4. Pressing the **ADD** or **DEL** button on the keyboard will add or delete entries. The **ADD** and **DEL** buttons are disabled when no specialties, procedures, or annotations have been selected. A confirmation message will display before any entries are deleted.

Playback of Recorded Videos

Within the Playback screen, the **VIDEOS** tab on the right side of the screen allows review and annotation of previously captured videos.



To browse videos:

1. Pressing the **PRIMARY** button will select between Primary and Secondary for browsing videos recorded on Channel 1 (primary) or Channel 2 (secondary).
2. Pressing the arrows on either side of the center preview screen will scroll through captured videos one at a time. Each video is identified in the top left corner by the channel and order in which it was captured. Primary channel videos are identified with a "P" and Secondary channel videos are identified with an "S."
3. Pressing the arrows on either side of the bottom panel of videos will scroll through the album five videos at a time.
4. Double-tapping an image from the bottom panel of images will load the corresponding video on the center preview screen.

To playback videos:

5. Pressing the **PLAY** and **STOP** buttons will control the video displayed in the center preview pane.

To select videos:

6. Pressing any video will select it. Selected videos are identified by a green border. A video can be deselected by pressing it again.
7. Pressing the **SELECT NONE** button toggles between Select All and Select None to select or deselect all images in the album.

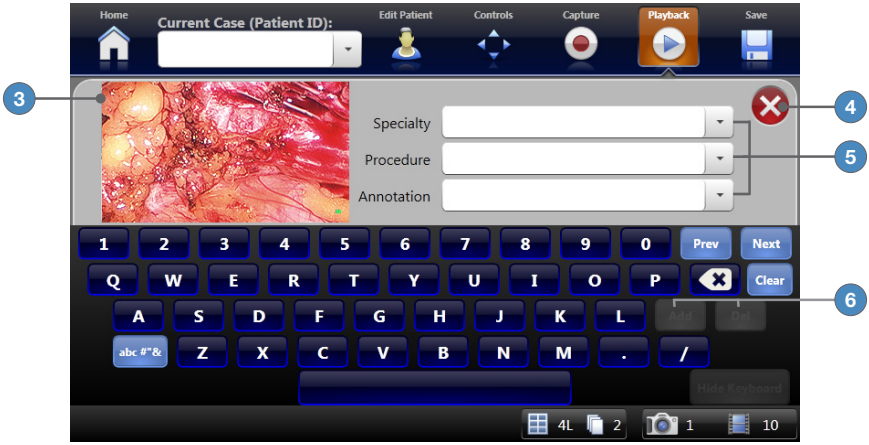
To view video annotations:

8. Pressing the **SHOW ANNOTATIONS** button will display the annotations for each video.

Editing Video Annotations

1. Press the **SHOW ANNOTATIONS** button.
2. Select an entry from the dropdown menu, or press the **EDIT** button to display the Edit Annotation screen.

The Edit Annotation Screen



3. The Edit Annotations screen will display when the **EDIT** button is selected in the Video Album Playback screen.
4. Pressing the button closes the Edit Annotations screen and returns to the Video Playback screen.
5. The drop-down menus list selections for Specialty, Procedure, and Annotation.
6. Pressing the **ADD** or **DEL** button on the keyboard will add or delete entries. The **ADD** and **DEL** buttons are disabled when no specialties, procedures, or annotations have been selected. A confirmation message will display before any entries are deleted.

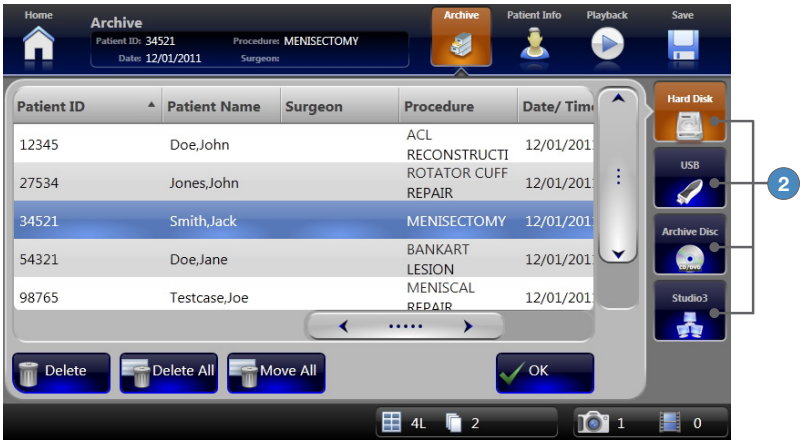
Printer Settings

Printer settings can be accessed from the Playback screen or from the Capture screen. Printer settings are discussed in the "Video and Printer Settings" section of this manual.

Viewing Archived Information

Patient cases are automatically saved to the SDC3 hard disk, and can be archived for future reference or access.

1. Archived cases are accessible through the **ARCHIVE** button on the Home screen.
2. Within the Archive screen, cases can be accessed from or moved to external media such as USB, Discs, and Network locations.



Viewing Information Archived on the Hard Disk

All patient cases archived on the hard disk will appear in a list on the Archive screen.

To browse patient cases:

1. Pressing the **HARD DISK** tab will display all cases saved to the SDC3 hard disk.
2. The patient list displays up to five cases at a time. Use the scrollbars to scroll through the list.
3. The Navigation Bar displays categories of patient information. Selecting a column in the Navigation Bar will sort the patient list by that category.

To view patient cases:

4. Clicking anywhere on a row will select the patient case.
5. Pressing the **OK** button will display patient cases in read-only mode.
6. When a case is selected, pressing the **PLAYBACK** button displays images and videos within that case.
7. Pressing the **PATIENT INFO** button navigates to the Archived Patient List.

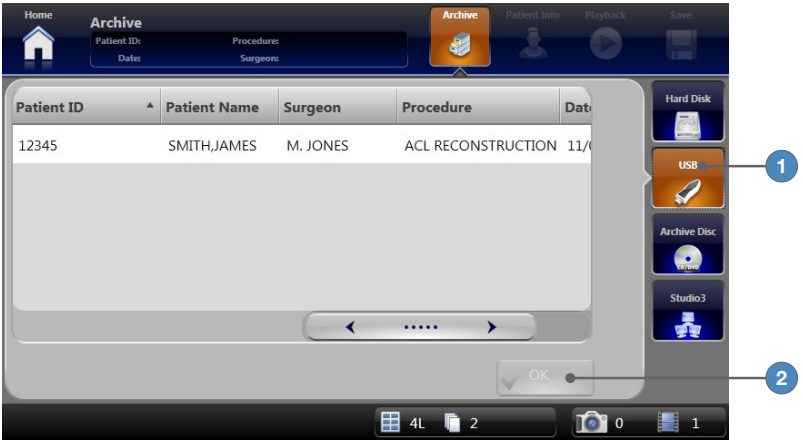
To move patient cases to a different location:

8. Pressing the **MOVE ALL** button moves all patient cases to a USB drive, Disc, or Studio3 media server. A popup message will display for confirmation of the move. Pressing the **YES** button moves the cases.
9. When a case is selected, pressing the **SAVE** button will open the Save screen, where you can choose to save the case to a USB drive, Disc, or Network location.

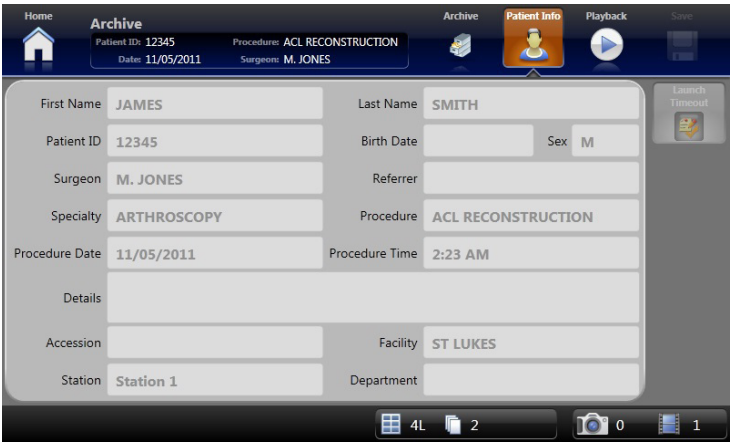
To delete patient cases from the hard disk:

10. Pressing the **DELETE** button deletes a selected patient case.
11. Pressing the **DELETE ALL** button deletes all archived patient cases.

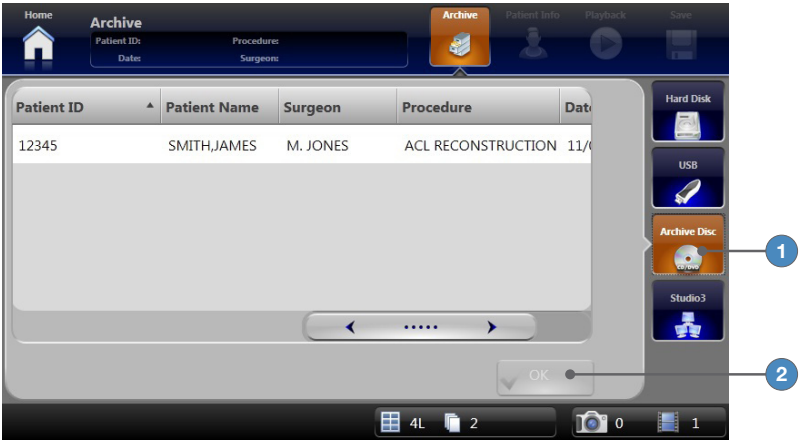
Viewing Information Archived on a USB Drive



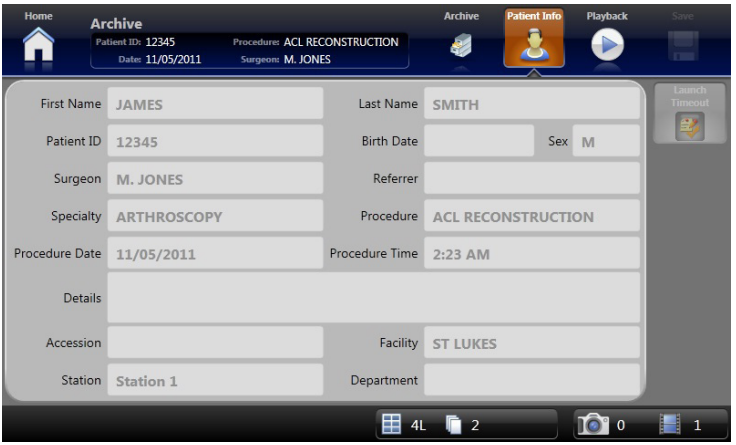
1. Pressing the **USB** tab displays patient cases stored on a USB drive connected to the SDC3. Patient cases will be displayed in read-only mode and the **SAVE** button will be disabled.
2. Pressing anywhere on a patient case will select it. Pressing the **OK** button displays selected archived information in un-editable mode as shown below.



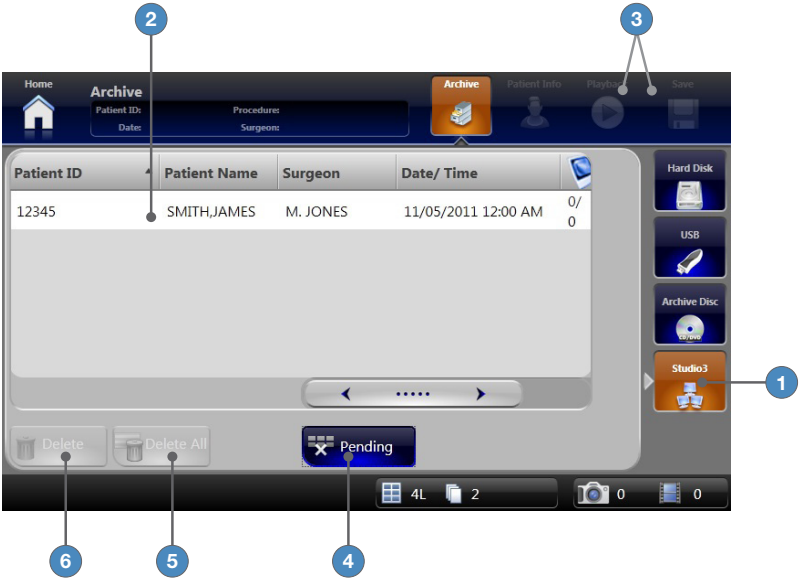
Viewing Information Archived on a Disc



1. Pressing the **ARCHIVE DISC** tab displays patient cases stored on a CD or DVD loaded into the SDC3. Patient cases will be displayed in read-only mode and the **SAVE** button will be disabled.
2. Pressing anywhere on a patient case will select it. Pressing the **OK** button will display selected archived information in un-editable mode as shown below.



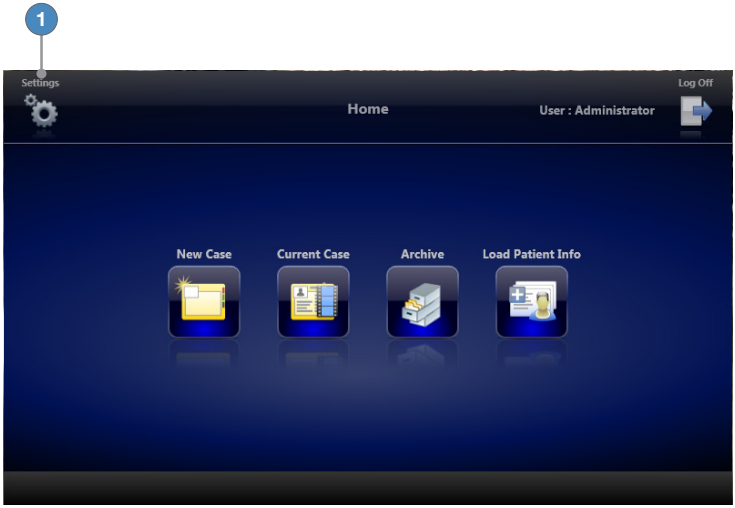
Viewing Information Archived on the Studio3 Media Server



1. Pressing the **STUDIO3** tab displays patient cases stored on the Studio3 server.
2. The Archive Patient List displays the number of images, videos or PDFs saved with a particular case on the Studio3 server.
3. The **SAVE** and **PLAYBACK** buttons are disabled in the **STUDIO3** tab.
4. Pressing the **PENDING** button toggles between the list of Pending and Completed cases. Pending patient cases are displayed by default.
5. Pressing the **DELETE ALL** button deletes all cases in the window.
6. Pressing the **DELETE** button deletes a selected case. A confirmation window will appear.

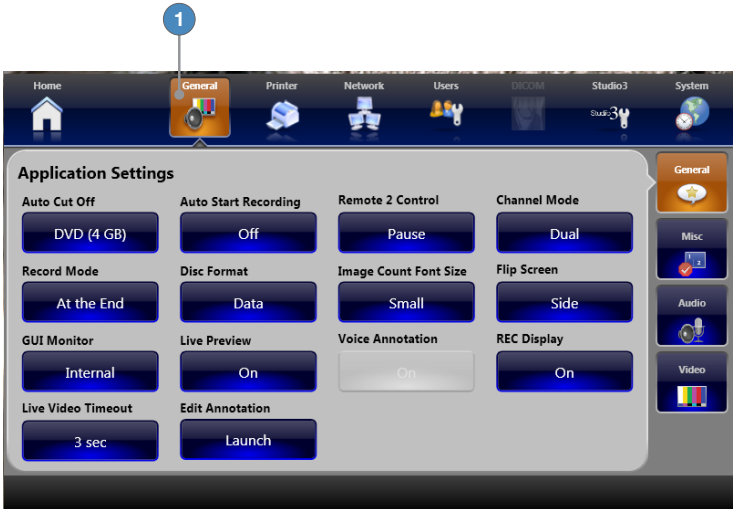
SDC3 Settings

System settings for the SDC3 can be established from the **SETTINGS** button at the top left of the Home screen. From the Settings screens, you can adjust audio and video settings, printer settings, network settings, user account settings, and Studio3 server settings.



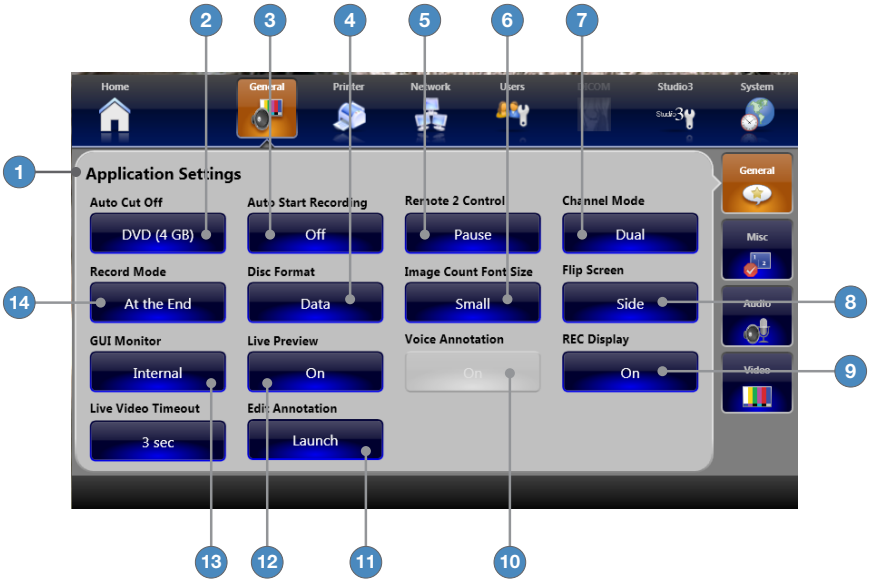
General Settings

General system settings are available from the **GENERAL** tab in the Settings menu. They include application, miscellaneous, audio, and video settings, each accessible by selecting the respective tab to the right of the screen.



General Application Settings

Descriptions of general application settings are provided below.



1. The General Application Settings screen displays opens automatically when the **SETTINGS** button is selected from the Home screen, or when the **GENERAL** tab is selected from the right of any settings screen.
2. The **AUTO CUT OFF** button determines when video recording will automatically cut off. Pressing the button toggles between timed options.
3. The **AUTO START RECORDING** button determines if video recording automatically starts at the beginning of a case. Select between On and Off.
4. The **DISC FORMAT** button selects how to save data to a disc. Select between Data and DVD Video. (The DVD Video option is available only when Record Mode is set to "At the End.")
5. The **REMOTE 2 CONTROL** button assigns the Remote 2 function from the camera head as either Stop or Pause.
6. The **IMAGE COUNT FONT SIZE** button adjusts the size of the font used to display image count in the capture screen.
7. The **CHANNEL MODE** button selects between Single- or Dual-channel mode.
8. The **FLIP SCREEN** button selects if and where images will display on the surgical display when they are captured. Select between None (no display), One (entire display), or Side (side of display).
9. The **REC DISPLAY** button causes the words "Rec" and "Rec Stopped" to appear on the surgical display when recording is started or stopped. Select between On and Off.
10. The **VOICE ANNOTATION** button activates the voice annotation screen after every image capture. (This feature is only available for systems equipped with the SDC3 Voice Package.) Select between On and Off.

11. The **EDIT GLOBAL ANNOTATIONS** button opens a screen for editing global annotations, which will then be made available during patient cases. (See the "Editing Global Annotations" section immediately following this section.)
12. The **LIVE PREVIEW** button determines what displays in the preview window of the Capture screen. Select On for live camera image, or Off for the last captured image.
13. The **GUI MONITOR** button allows the touchscreen interface to appear on an external touchscreen monitor (the monitor must be connected via VGA and Serial connection to the SDC3 console). Select Internal for the interface to appear on the SDC3 screen, or External for the interface to appear on the external monitor.
14. Pressing the **RECORD MODE** button toggles between "Real Time" and "At the End."

Editing Global Annotations

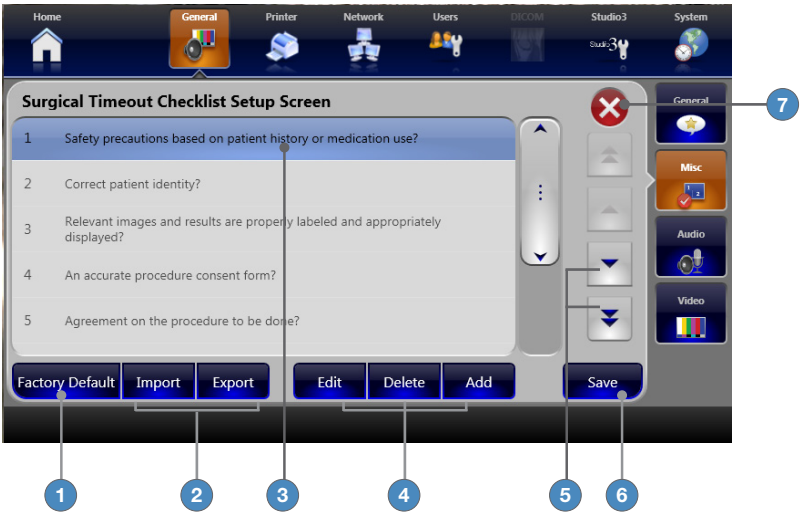
1. Select a specialty from the dropdown menu, or use the keyboard to enter text.
2. Select a procedure and/or annotation from the dropdown menus, or use the keyboard to enter text. (Procedure and annotation options change according to the specialty selected.)
3. Press the **ADD** or **DEL** button on the keyboard to add or delete entries.
4. Press the button to close the Edit Annotations screen and return to the General Application Settings screen.

General Miscellaneous Settings

1. Pressing the **MISC** tab displays general miscellaneous settings.
2. The **+/-** buttons adjust the position of images projected onto the surgical display. Use the appropriate Standard Definition or High Definition settings for your video source. The **RESET** buttons restore factory default values.
3. The **SURGICAL TIMEOUT CHECKLIST** buttons enable/disable the surgical timeout checklist. The **SETUP** button launches the Surgical Timeout Checklist Setup screen.

Setting Up the Surgical Timeout Checklist

The Surgical Timeout Checklist Setup screen displays when the **SETUP** button is selected in the General Miscellaneous Settings screen.



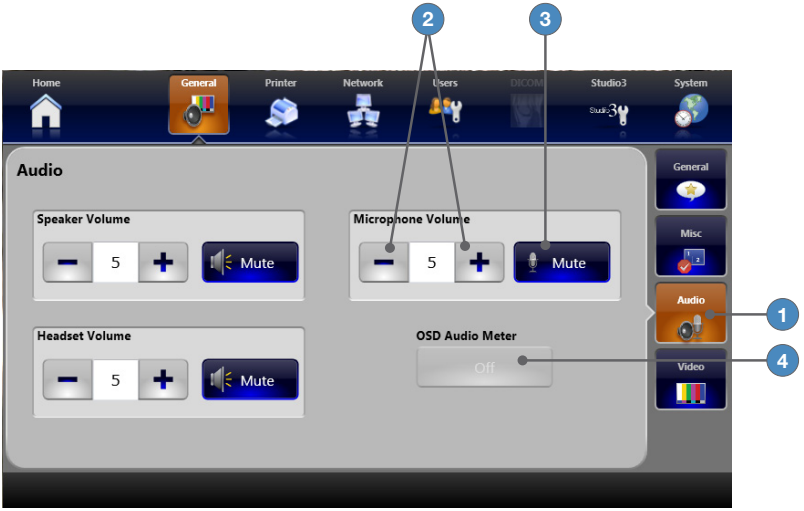
1. Pressing the **FACTORY DEFAULT** button restores the factory default checklist.
2. Pressing the **IMPORT** and **EXPORT** buttons import a checklist from a USB storage device or export a checklist to a USB storage device.
3. Pressing anywhere on a question/line will select it.
4. Pressing the **ADD**, **EDIT**, or **DELETE** buttons will display a pop-up keyboard to make changes to the selected question/line.
5. Pressing the arrow buttons will move the selected question/line up or down in the checklist order.
6. Pressing the **SAVE** button saves changes to the checklist.
7. Pressing the button returns to the General Miscellaneous Settings screen.

Surgical Timeout Checklist Keyboard

The Surgical Timeout Checklist Keyboard displays when the **ADD**, **EDIT** or **DELETE** buttons are selected in the Surgical Timeout Checklist Setup screen.

1. In the text box, enter the new question/line for the checklist.
2. Press the **OK** ✓ button to save changes displayed in the text box.
3. Press the **CANCEL** ✗ button to discard changes and return to the Surgical Timeout Checklist Setup screen.

General Audio Settings



1. Pressing the **AUDIO** tab displays the General Audio settings screen.
2. The +/– buttons adjust volumes for the Headset, Speaker, and Microphone.
3. The **MUTE** buttons mute the Headset, Speaker, or Microphone.
4. The **OSD AUDIO METER** button is enabled only when the SDC3 Voice Package is installed. It appears as an indicator bar on the surgical display to indicate the strength of the audio input.

General Video Settings

1. Pressing the **VIDEO** tab displays the General Video Settings screen.
2. The +/– buttons adjust Brightness, Contrast, Chroma and Phase for each channel.
3. Pressing the **RESET** button restores default settings. The **RESET** button is disabled at default settings.

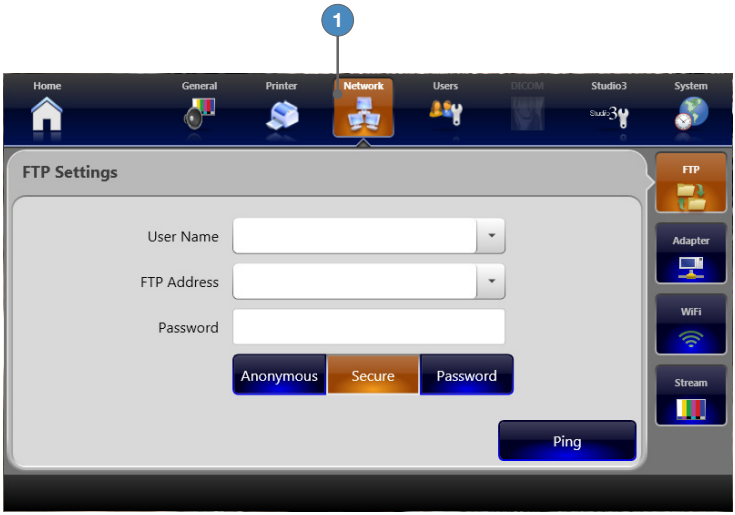
Printer Settings

1. Selecting the **PRINTER** tab navigates to the Page Settings screen.

2. Selecting a checkbox will cause that data to appear on the printed page.
3. Pressing the **IMPORT LOGO** button imports a logo file (.bmp file type) from a USB storage device. The imported logo will appear on the printed page when "Logo" is checked.
4. Pressing the **RESET** button restores default settings.
5. The logo preview field displays the logo that will appear on the printed page when "Logo" is checked.
6. The print quality is displayed in the Print Quality display window. Print quality is set to "Auto" by default and cannot be changed.
7. The paper type is displayed in the Paper Type display window. Paper type is set to "Letter" by default. If the SDP1000 printer is connected to the SDC3, the **PAPER TYPE** button toggles between "Letter" and "A4."

Network Settings

1. Network settings are available from the **NETWORK** tab in the Settings menu. They include FTP, Network Adapter, WiFi, and Video Streaming settings, each accessible by selecting the respective tab to the right of the screen.



Network FTP Settings

Network FTP settings are used to set up connection to an FTP site.

1. Selecting the **FTP** tab displays the FTP Settings screen.
2. Enter the User Name, FTP Address, and Password (if password protected) in the appropriate field. The drop-down menus list options for user name and FTP address.

Note: A keyboard will appear for manually entering values in these fields if one of the choices from the dropdown menu is not selected. User names and addresses can be added or deleted as appropriate.

3. Press the **ANONYMOUS**, **SECURE,** or **PASSWORD** button to select the desired type of FTP login.
4. Press the **PING** button to test connection to the FTP site.

SDC3 Networking Setup

Setup Requirements

- Protocol Used: FTP (File Transfer Protocol)
- A TCP/IP network.
- A secure FTP (FTP over SSH) server may be installed and configured, if needed. SDC3 does not support FTP over SSL.

Instructions

1. Enter the IP address of the FTP server (and not the SDC3) into the **SDC3** tab in the "Config" menu.
2. Create a folder named SDC3 in the default path of the FTP Server. In this folder, create a folder for the User name. For example, if you have anonymous FTP service running on a server with an IP address of 10.2.101.26, and you have a folder called JOHND in the SDC3 folder in the default path of the anonymous login, then you should enter 10.2.101.26 in the **NETWORK** tab as the 'FTP Address' and JOHND as the 'Username.'
3. Press the **ADD** button so that SDC3 will remember the user name and the FTP Address in the list. SDC3 can remember up to 500 user names and FTP addresses.
4. Select the Write Videos checkbox on the **NETWORK** tab to write videos to the network.
5. Press the **SAVE TO NETWORK** button from the Save menu to save images and videos. A confirmation screen will display. Check the Anonymous Login checkbox.

The SDC3 checks the server for a response. If it gets a valid response, it performs an anonymous FTP login. It then changes directory to the directory corresponding to the current Username (JOHND, in current example). It does not create a new directory based on the Username. This avoids creation of multiple directories if someone accidentally enters a wrong/invalid Username. Therefore, you have to enter a Username for the FTP to work.

For Login with Username and Password

Note: The FTP server should be setup for the users who have access. Passwords should be all caps.

1. Create a folder under the root folder of the FTP server folder.
2. Create another folder under the SDC folder with the same name as the user name.

Follow steps 3 - 5 above, except in step 5, uncheck the Anonymous Login checkbox and enter the password.

Directory Structure

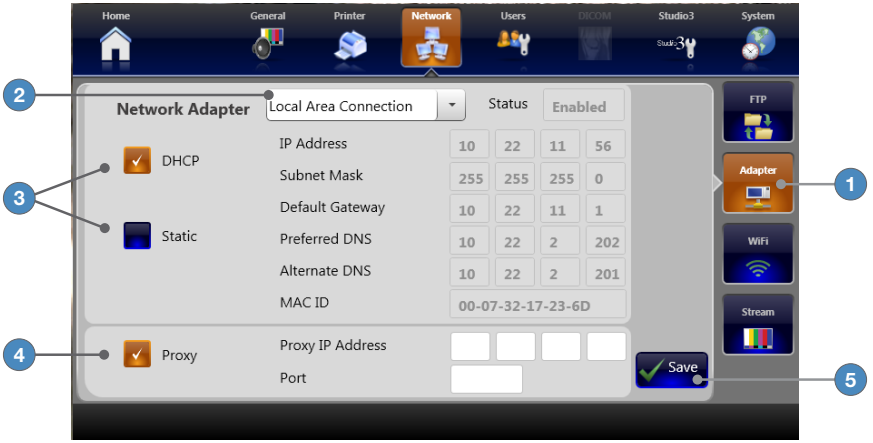
- <Default FTP path>\SDC\Username\?????MMDDYYYY_HHMMSS where, ?????: First 13 characters of the Patient's Name / ID entered

- Username: Doctor's Username which can be the same as his/her Notematic ID MMDDYYYY_HHMMSS: Date/Time stamp to guarantee uniqueness

Note: If there are any problems writing the data, check if the read/write permissions of the FTP server are set. Also make sure that the firewall settings on the server do not block the FTP port.

Network Adapter Settings

1. Selecting the **ADAPTER** tab displays the Network Adapter Settings screen.



2. Select the Network Adapter from the dropdown menu.
3. Select the type of IP address by checking the box for DHCP or Static.
4. Select Proxy, if desired, then enter proxy settings.
5. Press the **SAVE** button to save entered settings.

WiFi Network Connection

The WiFi Network Connection screen displays a list of available wireless networks, their signal strengths, and security status. Selecting a network from this screen opens an authentication screen to login to that network.

1. Pressing the **WIFI** tab displays the WiFi Network Connection screen.
2. Pressing the **REFRESH** button refreshes the list of available WiFi connections.
3. Pressing the **WIFI ON/OFF** button enables or disables WiFi. WiFi is OFF by default.
4. Pressing **IP SETTINGS** tab opens the IP settings screen, where IP settings for the selected wireless network are displayed.
5. Available wireless networks are displayed by name, signal strength, and secure/unsecure status.
6. Pressing the arrow button opens the login screen for the corresponding wireless network.

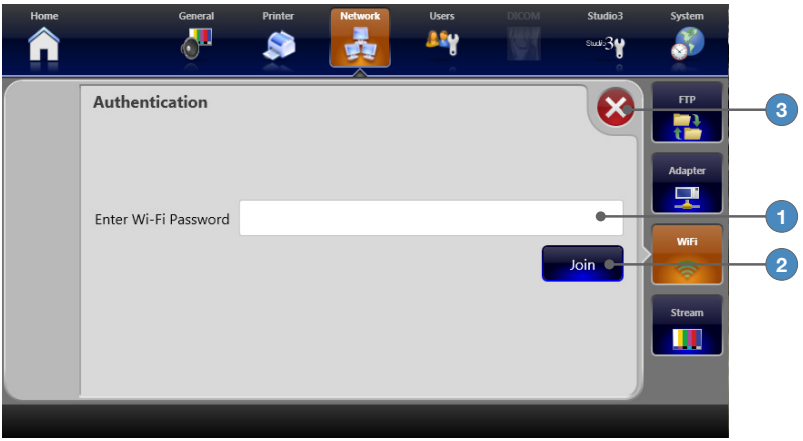
Authentication

Depending on the type of wireless network selected, the SDC3 will prompt for a user name and password, or for a WiFi password.

Username and Password

1. Enter the User Name and Password in the corresponding fields.
2. Press the **JOIN** button to allow users to join the network.
3. Press the ⊗ button to close the screen and return to the WiFi Network Connection screen.

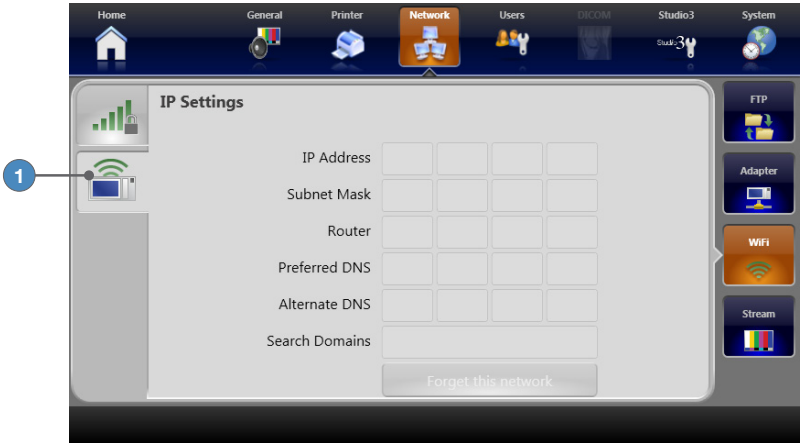
WiFi Password



1. Enter the WiFi password. (The WiFi Setting Authentication screen asks for the WiFi password when an unsecured WiFi connection is selected for the first time.)
2. Press the **JOIN** button to allow users to join the network.
3. Press the ⊗ button to close the screen and return to the WiFi Network Connection screen.

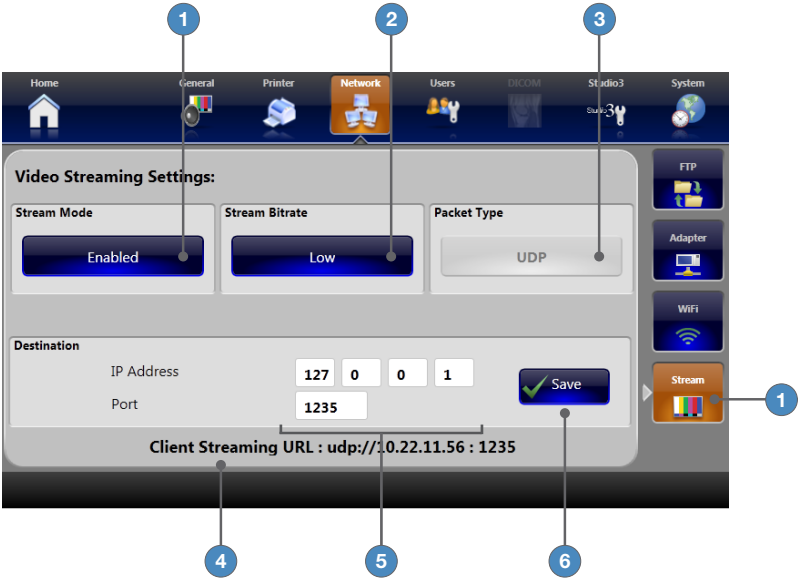
Wireless IP Settings

1. The WiFi Setting screens display the IP settings of the connected WiFi network.



Network Streaming Settings

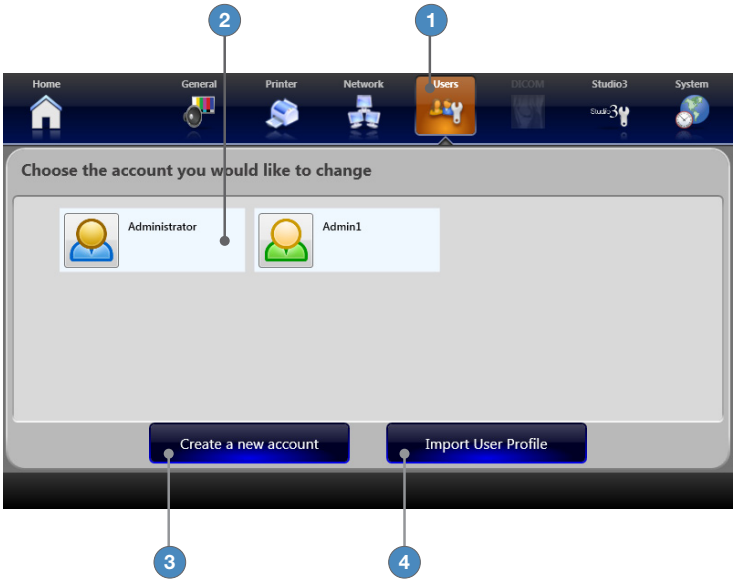
The Network Streaming Settings allow you to set up a destination for streaming video from the SDC3. Starting and stopping video streaming is done through the Capture screen.



1. Pressing the **STREAM** tab displays the Video Streaming Settings screen.
   Note: Streaming details cannot be modified while streaming is in progress.
2. Pressing the **STREAM MODE** button enables or disables streaming.
3. Pressing the **STREAM BITRATE** button selects between Low, Medium, and High.
4. The **PACKET TYPE** button displays UDP as the only available option, and is disabled.
5. The destination (Client) URL, where videos will stream to, displays here.
6. The destination IP address and Port number can be entered in the Destination box.
7. Pressing the **SAVE** button saves video streaming settings.

User Account Settings

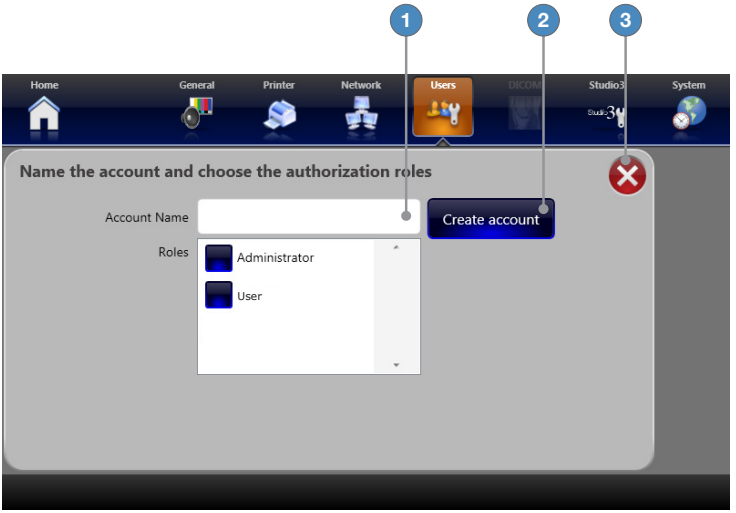
In the User Accounts Settings screens, you can create, modify, or delete user accounts.



1. Selecting the **USERS** tab opens the User Accounts screen. All available user accounts are listed.
2. Selecting any user account will open the Account Modification screen.
3. Pressing the **CREATE NEW ACCOUNT** button opens the Account Creation screen.
4. Pressing the **IMPORT USER PROFILE** button imports a user profile from a USB drive.

Creating a New User

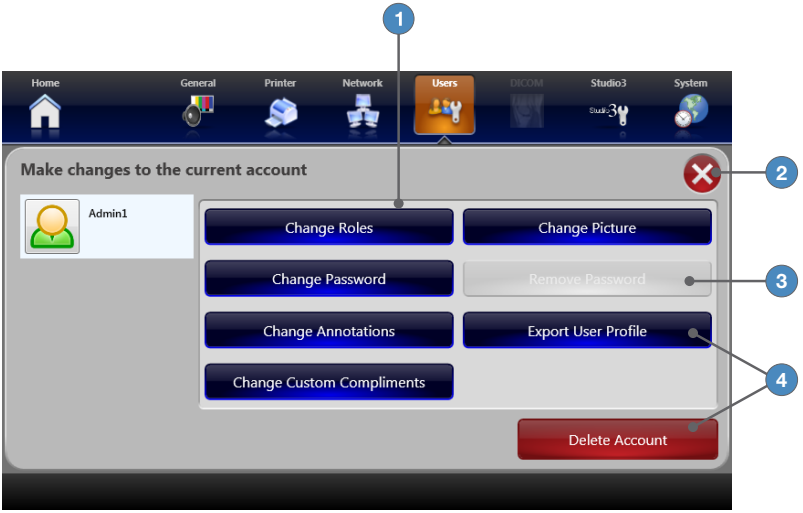
New user accounts can be created by a user account assigned to an Administrator role.



1. Enter the new account name and select a role from the drop-down menu. Choose either "Administrator" or "User."
2. Press the **CREATE ACCOUNT** button to save the new account.
3. Press the button to return to the User Accounts screen.

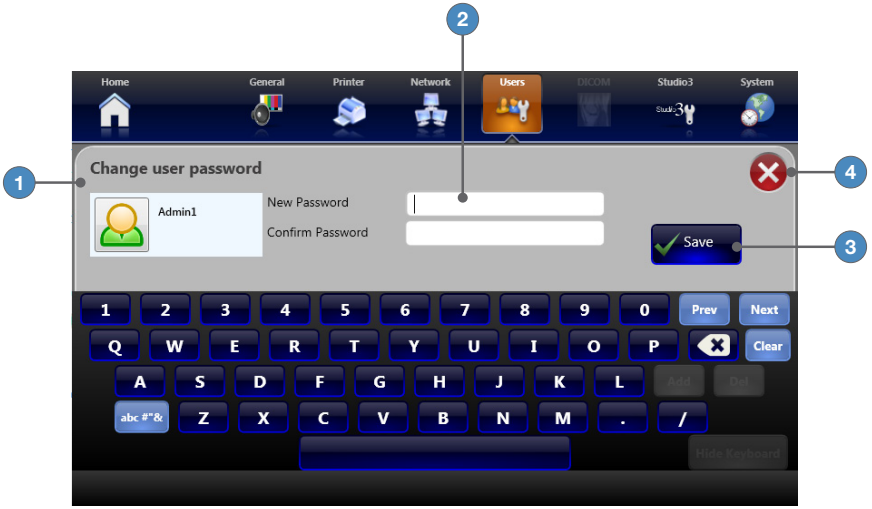
Modifying a Selected Account

User accounts can be modified to change roles, passwords, custom annotations and compliments, and account picture.



1. Pressing any modification button will open a screen to perform that function for the selected user account.
2. Pressing the button returns to the User Accounts screen.
3. The **REMOVE PASSWORD** button is disabled when no password is set for the selected account.
4. The **DELETE ACCOUNT** and **EXPORT USER PROFILE** buttons are disabled when the selected account is a default Administrator account.

Changing a User Password

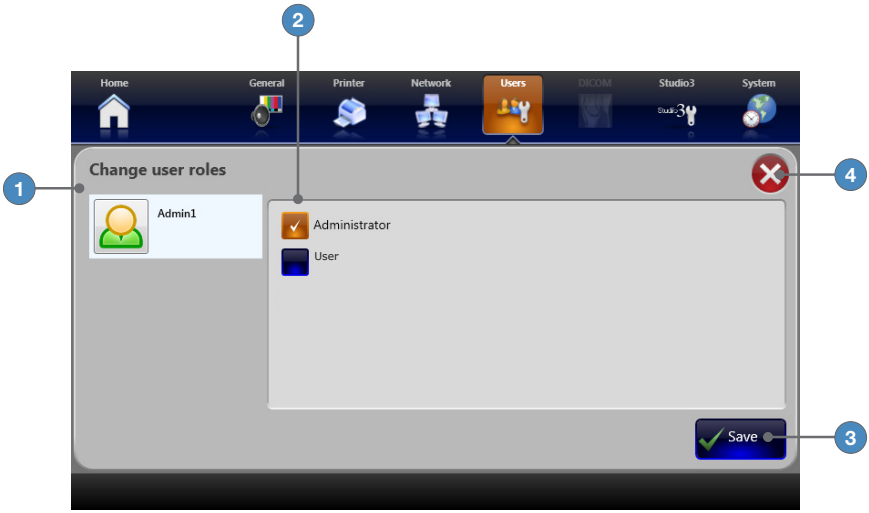


1. The Change User Password screen displays when the **CHANGE USER PASSWORD** button is selected in the Account Modification screen. The account user name and picture are displayed for the selected account.
2. Enter and confirm the new password in the appropriate fields.
3. Press the **SAVE** ✓ button to save password changes.
4. Press the **X** button to return to the Account Modification screen.

Changing a User Role

User accounts can be assigned one of two roles: Administrator or User.

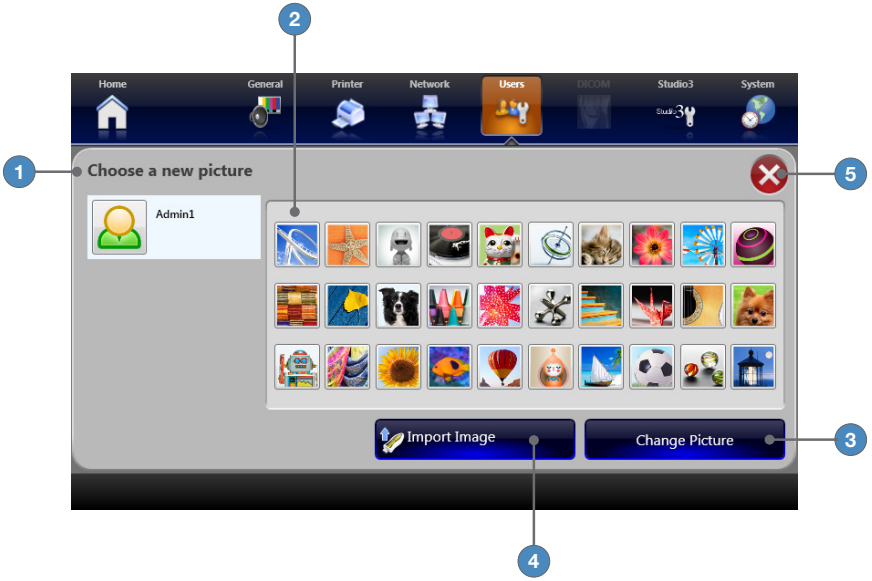
- Administrator accounts have the ability to add, delete, or modify user accounts on the system.
- User accounts have the ability to modify their own accounts.



1. The Change User Roles screen displays when the **CHANGE ROLES** button is selected in the Account Modification screen. The selected account user name and picture are displayed.
2. Select the appropriate checkbox to designate the account as an Administrator or User.
3. Press the **SAVE** ✓ button to save changes to the user role.
4. Press the ⊗ button to return to the Account Modification screen.

Changing a User Picture

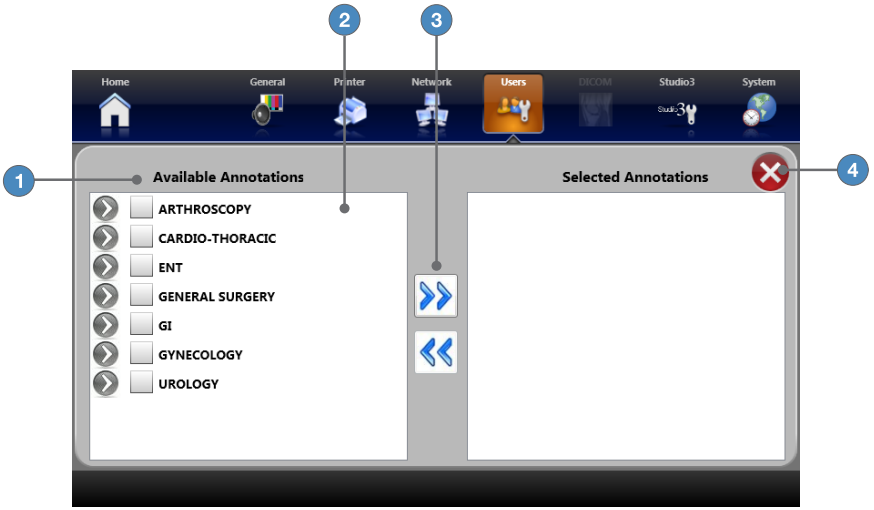
The picture associated with a user account can be selected from a set of pre-loaded images, or imported from a USB drive.



1. The Choose New Picture screen displays when the **CHANGE PICTURE** button is selected in the Account Modification screen. The selected user name and current picture are displayed.
2. Press any picture in the list to select it.
3. Press the **CHANGE PICTURE** button to assign the selected picture to the user account.
4. To import a custom image, press the **IMPORT IMAGE** button to load a picture from a USB storage device.
5. Press the button to return to the Account Modification screen.

Changing a User Annotation List

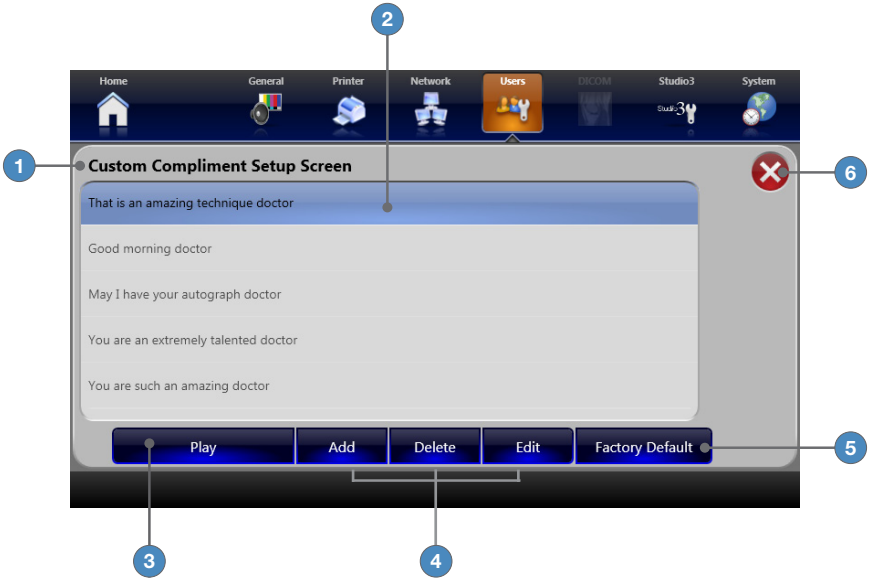
Pre-defined image and video annotations can be selected for a user account.



1. The Select Annotation screen displays when the **CHANGE ANNOTATION** button is selected in the Account Modification screen.
2. Selecting a specialty checkbox in the Available Annotations window will display pre-defined procedure names and annotations. Select the desired procedure and annotation by pressing the corresponding checkbox.
3. Press the **RIGHT** or **LEFT** arrow button to move selected annotations in or out of the Selected Annotations window.
4. Press the button to return to the Account Modification screen.

Setting Up Custom Compliments

The SDC3 will offer a compliment when prompted. Compliments can be selected from a pre-defined list, or typed in by the user account.

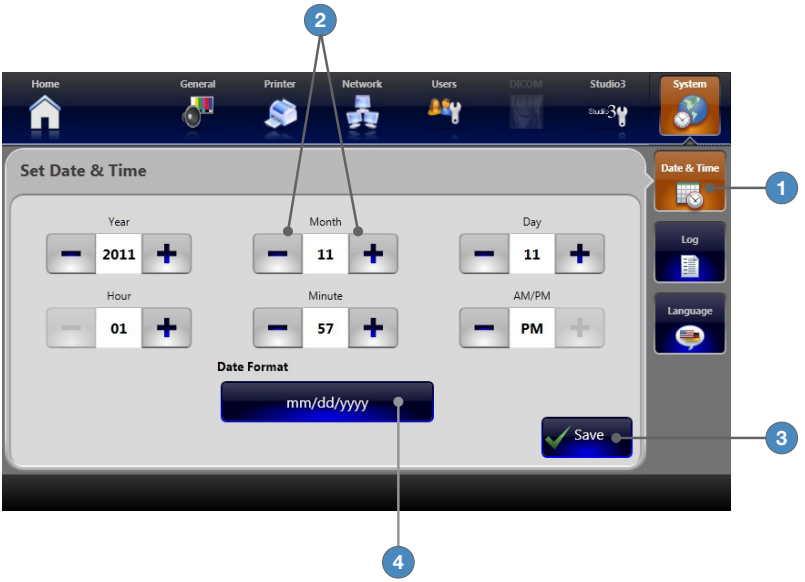


1. The Custom Compliment Setup screen displays when the **CHANGE CUSTOM COMPLIMENTS** button is selected in the Account Modification screen.
2. Pressing anywhere on a compliment line selects the compliment.
3. Pressing the **PLAY** button plays a selected compliment.
4. Pressing the **ADD**, **EDIT** or **DELETE** buttons performs the corresponding function for a selected compliment. (When adding or editing a compliment, a keyboard appears on the display. Pressing the **SAVE** ✓ button saves edited text. Pressing the **CANCEL** ✗ button cancels changes.)
5. Pressing the **FACTORY DEFAULT** button resets the custom compliments list to the factory default. A confirmation screen will appear.
6. Pressing the ⊗ button returns to the Account Modification screen.

System Settings

Within the **SYSTEM SETTINGS** tab, you can adjust the system date and time, view the system log, and select the system language.

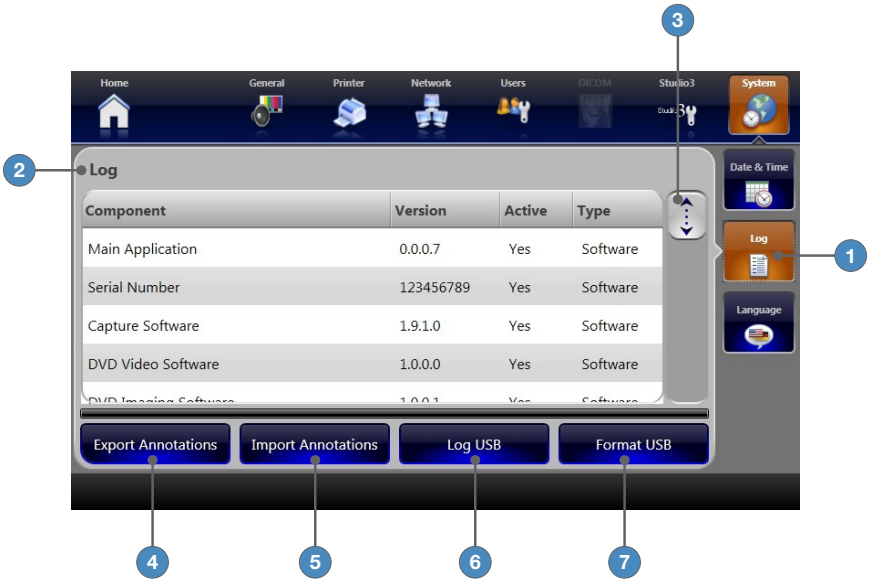
Date and Time Settings



1. Selecting the **DATE & TIME** tab from the System screen navigates to the Set Date & Time Screen.
2. The +/– buttons change the date and time values.
3. Pressing the **SAVE** ✓ button saves changes.
4. Pressing the **DATE FORMAT** button toggles between available date formats.

System Log Settings

Settings for the System Log are adjusted in the "System Log Settings" screen. Here, information about system drivers, connected devices, and system events are stored, as well as global annotation entries. Information from this screen can be exported to a USB drive for off-site diagnostics.



1. Selecting the **LOG** tab from the System screen to opens the Log screen.
2. The Log screen displays each SDC3 component, along with its version, active status and type.
3. The scroll bar moves to display components not included in the initial view.
4. Pressing the **FORMAT USB** button formats a USB storage device using NTFS format.
5. Pressing the **LOG USB** button transfers the system log file to a USB storage device.
6. Pressing the **IMPORT ANNOTATION** button imports annotations from a USB storage device to the system.
7. Pressing the **EXPORT ANNOTATION** button exports a master list of annotations from all user accounts on the system to a USB storage device.

System Language Settings

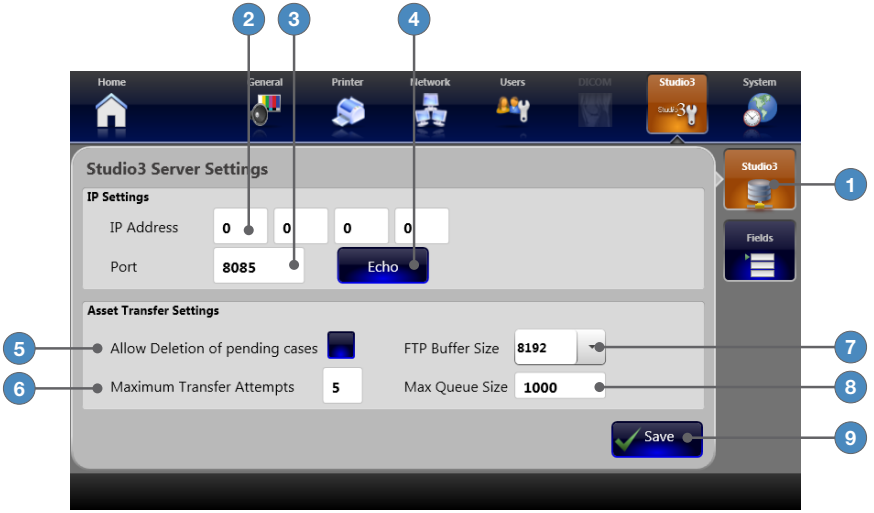
The system language can be changed through the "System Language Setting" screen.

1. Selecting the **LANGUAGE** tab in the System screen opens the "Language Setting" screen.
2. Pressing any button selects the corresponding language. The system will reboot before the language change takes effect. Previously entered text fields will remain in the language in which they were entered.

Studio3 Settings

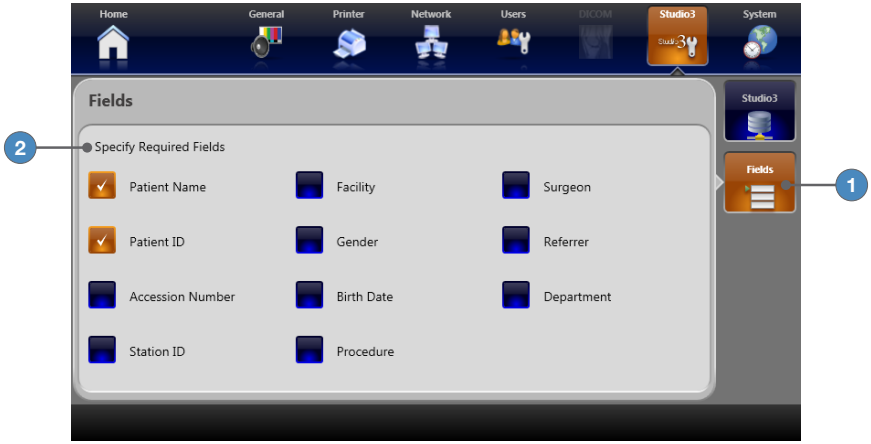
1. Settings for how the SDC3 interacts with the Studio3 Server are accessible from the **STUDIO3** tab.

Studio3 Server Settings



1. Selecting the **STUDIO3** tab displays the Studio3 Server Settings screen.
2. The Studio3 server IP address can be entered in the IP Address field.
3. The Studio3 server Port number can be entered in the Port field.
4. Pressing the **ECHO** button tests the Studio3 server connection. Valid server credentials are confirmed by an "Echo Successful" message displayed in the status bar.
5. Selecting the Allow Deletion of Pending Cases checkbox allows deletion of pending cases from the Studio3 archive list.
6. The Maximum Transfer Attempts field sets how many times the SDC3 will attempt to transfer data to the Studio3 server. The default value is five attempts.
7. The dropdown menu lists available FTP Buffer Sizes.
8. The default Max Queue Size is 1000. Alternate values can be entered in this field.
9. Pressing the **SAVE** button saves settings.

Selecting Fields for Cases Saved on the Studio3 Server



1. Selecting the **FIELDS** tab displays the Studio3 Fields screen.
2. Fields selected in the Specify Required Fields screen will appear in the saved case on the Studio3 server. Patient ID and Patient Name fields are required by default and cannot be unchecked.

Studio3 Networking Setup

Setup Requirements

- A TCP/IP network.
- A Stryker Studio3 Media Server installed and configured.

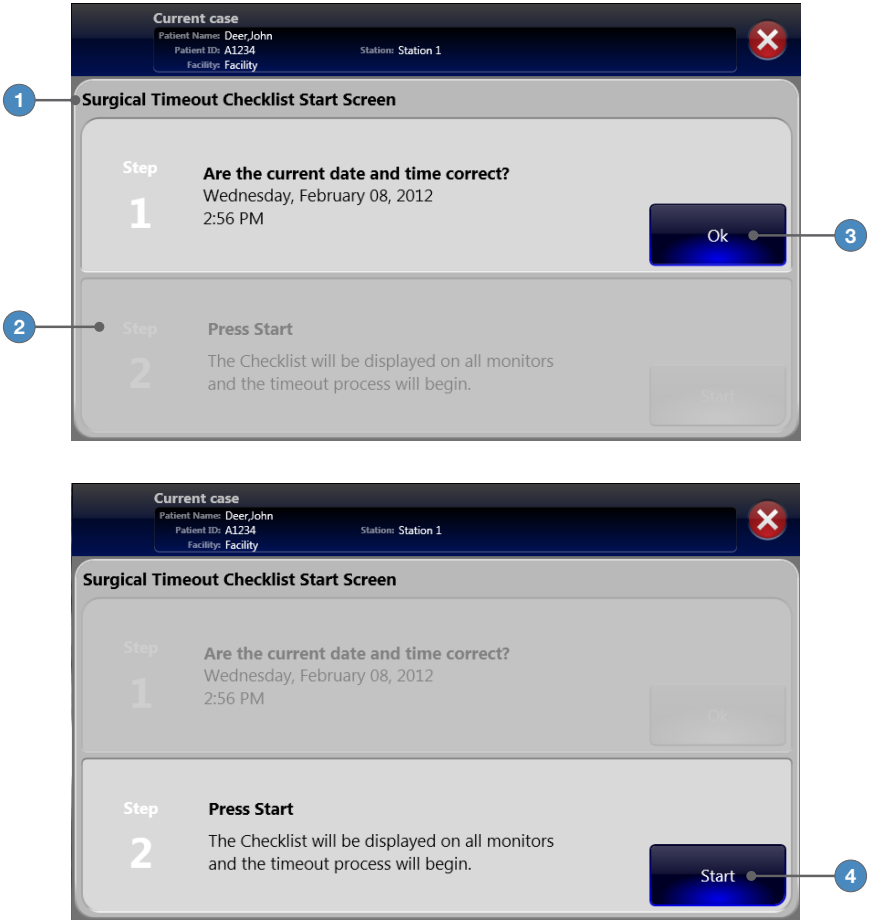
Instructions

1. Enter the IP address of the Studio3 Media Server into the **STUDIO3** tab in the Studio3 Server Settings screen.
2. Select the Studio3 checkbox in the Save Settings screen to enable the **STUDIO3 SAVE** button.
3. To save the images and videos, press the **STUDIO3 SAVE** button from the Save menu. A confirmation message will appear to indicate that the case has been added to the Studio3 transfer queue.
4. To view the pending/completed transfer queue, press the **STUDIO3** tab in the Archive menu.

Surgical Timeout Checklist Screens

When the surgical timeout checklist is enabled and launched at the beginning of a case, the Surgical Timeout Launch screens will appear on the SDC3 screen and on the surgical display.

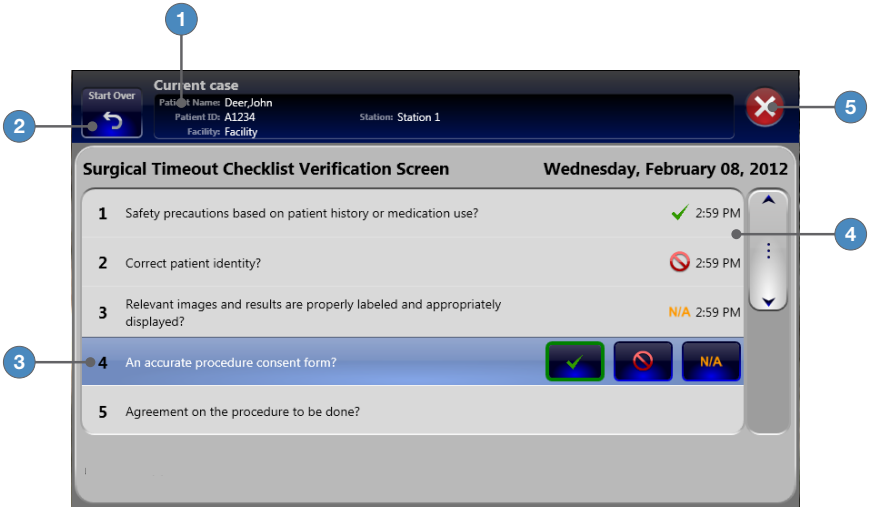
Surgical Timeout Checklist Start Screen



1. The Surgical Timeout Launch Screen is activated through a button in advanced configuration. The default value is ON.
2. User will be asked to verify correct date and time for Step 1.
3. Press OK once correct date and time are verified and Step 2 will be activated.
4. Pressing the **START** button will start the verification process.

Surgical Timeout Checklist Verification Screen

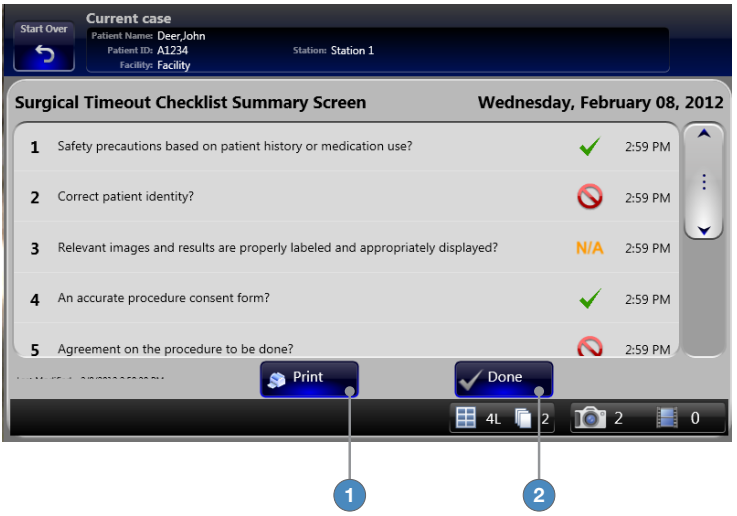
When the Surgical Timeout Checklist begins, the SDC3 will present a series of questions about the patient and the procedure that can be answered as yes, no, or not applicable.



1. The Surgical Timeout Checklist Verification Screen will display patient name, patient ID, facility name, and the station name on the screen.
2. Pressing the **START OVER** button will restart the verification process at any time during the process.
3. An answer is required for each question in the checklist. Options are yes, no, and N/A. Answers can be changed, but no question can be skipped.
4. The date and time of the last change/update are recorded at the end of each question.
5. Pressing the button exits the verification process.

Surgical Timeout Checklist Summary Screen

The Summary screen is displayed after all checklist questions have been answered and the user has the option to view and print checklist from archived case.



1. Pressing the **PRINT** button will print the summary screen.
2. Pressing the **DONE** button will exit the summary screen.

Troubleshooting

Problem	Solution
Login failure	Ensure that the correct user name and password are used to log into the system.
Video limit reached	Begin a new case to capture more videos.
Image limit reached	Begin a new case to capture more images.
List limit reached	The maximum number of cases permitted to be entered has been reached. Delete older entries in the list.
Error printing. No image captured/selected	Capture images and then select them to print.
Error saving settings	To restore previous settings, reboot the system.
FTP connection error	Ensure that the FTP server is up and the network cable is plugged in.
Error: Media unavailable	Please insert/connect a valid media to the SDC3™.
USB space insufficient	Ensure that there is free space available on the media.
Error: Disk corrupt. Please try again...	The media is corrupt. Insert a new disc to continue.
Error: Disc drive busy	Ensure that the disc drive is not being currently used. Reboot the machine if the error persists.
Error: locating logo.bmp	Ensure that the USB cable is connected properly. Ensure that the logo file is present on the USB drive and it is called "logo.bmp."
Error: upgrading software	Insert the upgrade dongle in the save screen.
Application has encountered a critical error and is shutting down.	Please reboot the system.
No live video on preview	Ensure that the camera is on and check the cable connections. Ensure that the proper video source is selected.
No live video on the monitor	Check the cable connections Ensure that the camera is powered on. Ensure that the proper video source is selected.
No live video in PIP on preview	Check the cable connections Ensure that the camera is powered on. Ensure that the proper video source is selected. Ensure that you are in PIP mode.
No live video PIP on monitor	Check the cable connections. Ensure that the camera is powered on. Ensure that the proper video source is selected. Ensure that the monitor OSD PIP is enabled via the application.

Print errors	Ensure there aren't any paper jams. Ensure the printer has enough ink.. Ensure the printer door is closed. Ensure the printer has paper. Ensure the printer is powered on. Ensure the printer cable is connected..
Error saving more than 4GB files to the USB	Ensure that the USB is formatted as NTFS. FAT 32 will not support any file size bigger than 4GB.
Error reading archived cases from DVD/CD	Reboot the system if you have just written the case. Check the disc on a different system.
No videos written to the USB	Ensure "write videos to USB" in the save settings is selected.
No videos written to the network	Ensure "write videos to Network" in the save settings is selected.
Annotation list is blank	Ensure that a procedure is selected in the Patient information screen in order to enable the annotation list.
Device status overlays do not appear on the surgical display	Ensure proper connections have been made between devices and device ports on the SDC3. Ensure the device is selected/added in the "Video Settings: On-Screen Display" menu.

Electromagnetic Compatibility

Like other electrical medical equipment, SDC3 requires special precautions to ensure electromagnetic compatibility with other electrical medical devices. To ensure electromagnetic compatibility (EMC), SDC3 must be installed and operated according to the EMC information provided in this manual.

The SDC3 has been designed and tested to comply with IEC 60601-1-2 requirements for EMC with other devices.

Caution: Portable and mobile RF communications equipment may affect the normal function of the SDC3.

Caution: Do not use cables or accessories other than those provided with the SDC3, as this may result in increased electromagnetic emissions or decreased immunity to such emissions.

Caution: If the SDC3 is used adjacent to or stacked with other equipment, observe and verify normal operation of the SDC3 in the configuration in which it will be used prior to using it in a surgical procedure. Consult the tables below for guidance in placing the SDC3

Guidance and Manufacturer's Declaration: Electromagnetic Immunity
SDC3 is intended for use in the electromagnetic environment specified below. The customer or the user of SDC3 should ensure that it is used in such an environment.
(a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast, and TV broadcast, cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the SDC3 system is used exceeds the applicable RF compliance level above, the SDC3 system should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the SDC3 unit. (b) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the SDC3 System

The SDC3 system is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The user of the SDC3 system can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the SDC3 system as recommended below, according to the maximum output power of the communications equipment.

	Separation distance (m) according to frequency of transmitter		
Rated maximum output power (W) of transmitter	150 kHz to 80 MHz $d = 1.17\sqrt{P}$	80 kHz to 800 MHz $d = 1.17\sqrt{P}$	800 kHz to 2.5 GHz $d = 1.17\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.70	3.70	7.37
100	11.70	11.70	23.30

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

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

Guidance and Manufacturer's Declaration: Electromagnetic Emissions		
SDC3 is intended for use in the electromagnetic environment specified below. The customer or the user of SDC3 should ensure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic Environment - guidance
RF emissions CISPR 11	Group 1	SDC3 uses RF energy only for its internal function; therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	SDC3 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes, provided the following warning is heeded: Warning: This system may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigating measures such as reorienting or relocating the system or shielding the location.
Harmonic emissions IEC61000-3-2	Class A	
Voltage Fluctuations/ flicker emissions IEC61000-3-3	Complies	

Guidance and Manufacturer's Declaration--Electromagnetic Immunity			
The SDC3 system is intended for use in the electromagnetic environment specified below. The user of the SDC3 system should ensure that it is used in such an environment.			
Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment--Guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the SDC3 system, including its cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	Recommended Separation Distance: $d = 1.17\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.17\sqrt{P}$ 80 MHz to 800 MHz $d = 2.33\sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey (a), should be less that the compliance level in each frequency range (b). Interference may occur in the vicinity of equipment marked with the following symbol:
NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.			
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			
(a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the SDC3 system is used exceeds the applicable RF compliance level above, the SDC3 system should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the SDC3 unit.			
(b) Over the frequency range 150 kHz to 80 Mhz, field strengths should be less than 3 V/m.			

Guidance and Manufacturer's Declaration: Electromagnetic Immunity			
SDC3 is intended for use in the electromagnetic environment specified below. The customer or the user of SDC3 should ensure that it is used in such an environment.			
Immunity Test	IEC 60601 test level	Compliance Level	Electromagnetic Environment - guidance
Electrostatic Discharge (ESD) IEC61000-4-2	±6kV contact ±8kV air	±2,4,6kV contact ±2,4,8kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC61000-4-4	±2kV for power supply lines	±2kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment
	±1kV for input/ output lines	±1kV for input/output lines	
Surge IEC61000-4-5	±1kV differential mode	±0.5, 1kV differential mode	Mains power quality should be that of a typical commercial or hospital environment
	±2kV common mode	±0.5,1, 2kV common mode	
Voltage dips, short interruptions and voltage variations on power supply input lines IEC61000-4-11	<5% Ut (>95% dip in Ut) for 0.5 cycle	<5% Ut (>95% dip in Ut) for 0.5 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of SDC3 requires continued operation during power mains interruptions, it is recommended that SDC3 be powered from an uninterruptible power supply or a battery.
	40% Ut (60% dip in Ut) for 5 cycles	40% Ut (60% dip in Ut) for 5 cycles	
	70% Ut (30% dip in Ut) for 25 cycles	70% Ut (30% dip in Ut) for 25 cycles	
	<5% Ut (>95% dip in Ut) for 5 sec	<5% Ut (>95% dip in Ut) for 5 sec	
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Not Applicable
NOTE Ut is the a.c. mains voltage prior to application of the test level.			

Cleaning and Maintenance

⚠ Warning

- To avoid electric shock and potentially fatal injury, unplug the SDC3 from the electrical outlet before cleaning.

Caution

- Do not spray cleaning liquid directly onto the unit as product damage may result. Spray on the cloth before wiping the unit.
- Do not immerse the console in any liquid as product damage will result.
- Do not use corrosive cleaning solutions to clean the unit as product damage may result.
- Do not sterilize the unit as product damage may result.

Cleaning

Should the unit need cleaning:

1. Spray cleaning liquid onto a dry, sterile cloth. Avoid excess liquid or drips.
2. Wipe the unit.
3. Take extra care when cleaning the front LCD screen. Excess liquid or drips that enter the bottom of the screen may result in product damage.

Maintenance

SDC3 requires no preventative or periodic maintenance. However, Stryker recommends you reboot the system daily for best performance.

Symbols

Device

Mouse

Keyboard

Monitor

Network

USB

Speaker

Input

Output

Serial port

Headset

Packaging/Labeling

Legal manufacturer

Date of manufacture

Consult Instructions for Use

CE Mark

Ambient temperature range

Relative humidity range

Serial Number

Product number

Equipotentiality

Protective Earth Ground

Authorized representative in Europe

Made in France

Stryker Firewire

Radiation Emitting

Compliance to Electrical Safety Standards

Complies with Australian Communications Authority

Warning/Caution: See Instructions for Use

Complies with Federal Communication Commission Standards

This product contains electrical waste or electronic equipment. It must not be disposed of as unsorted municipal waste and must be collected separately.

Technical Specifications

Equipment Information	
Size	• **Control Unit:** 12.5″W × 16.5″D × 7.25″H • **Total Weight:** 22.5 lbs (10.2 kg) • **Display:** 8″TFT LCD, with digital touchscreen
Power Consumption	100-240VAC ~ 50/60Hz, 4A/2A maximum
Electrical Safety Classification	• Class I Equipment • No Applied Part • Water Ingress Protection, IPX0 • Continuous Operation
Environmental Specifications	• **Operating Temperature:** 10 – 40°C • **Operating Humidity:** 25 – 75% RH • **Transport and Storage Temperature:** -18° – 60°C • **Transport and Storage Humidity:** 15 – 90% RH
Safety and EMC Compliance	• UL 60601-1:2006 • IEC 60601-1:1988 +A1:1991 +A2:1995 • IEC60601-1:2005 +Corr 2006 +Corr 2007 • IEC 60601-1-1:2000 • IEC 60601-1-2:2007 • IEC 60601-1-4:1996 +A1:1999 • IEC60601-1-2:2001 +A1:2004
FCC Compliance	Contains FCC ID: RYK-WUBR170GNM This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Image	
Resolution	• **NTSC:** 640 × 480 • **PAL:** 768 × 576 • **XGA:** 1024 × 768 • **SXGA:** 1280 × 1024 • **High Definition 720:** 1280 × 720 • **High Definition 1080:** 1920 × 1080
Formats	Bitmap (BMP), Joint Photographic Experts Group (JPG, JPEG), JPEG2000, Tagged Image File Format (TIFF), Truevision Targa (TGA) and Portable Network Graphics (PNG)

Audio	
Input/Output	• Stereo Line and Headset Input/Output • 1 Speaker Output

Network	
Type	10/100/1000 Mbps ethernet

Video	
Video Input	• **(2) S-Video, (1) Composite:** (NTSC) 720 × 480, (PAL) 720 × 576 • **(2) DVI, (2) RGBHV (via DVI-I connectors),** (SXGA) 1280 × 1024, (XGA) 1024 × 768, (720p) 1280 × 720, (1080p) 1920 × 1080
Video Outputs	• 1 S-Video, 1 Composite • 2 DVI and 2 RGBHV (via DVI-I connectors)
Encoding Format/ Resolution	• MPEG2: 720 × 480, 720 x 576 • H.264: (NTSC) 720 × 480, (PAL) 720 × 576, (XGA) 1024 × 768, (SXGA) 1280 × 1024, (720p) 1280 × 720, (1080p) 1920 × 1080

Printer	
Auto Printing	• 1, 2, 4L, 4S, 6, 8, 12, or 18 images per page for portrait orientation • 1, 2, 4L, 4S, 6, 9, 12, or 16 images per page for landscape orientation
Printers Supported	• SDP1000 • Kodak ESP 7250

Storage Devices	
Disc	• **Capacity:** 100 images and 99 video files, with auto cutoff for CD (600MB), DVD (Data - 4.0 GB; Video - 3.6 GB), or none (45 GB, maximum case size permitted) • **Time Based Auto Cutoff Options:** 15 sec, 30 sec, 1 min, 2 min, 5 min, and 30 min • **Recording Formats:** CD-R, DVD-R, DVD+R (single session), DVD+RW
USB	**Format:** NTFS and FAT32 format supported (read/write), change from FAT32 to NTFS format or FAT32 to NTFS format supported, MAC users will only have read capabilities

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