WiSe™ 26″ HDTV Surgical Display

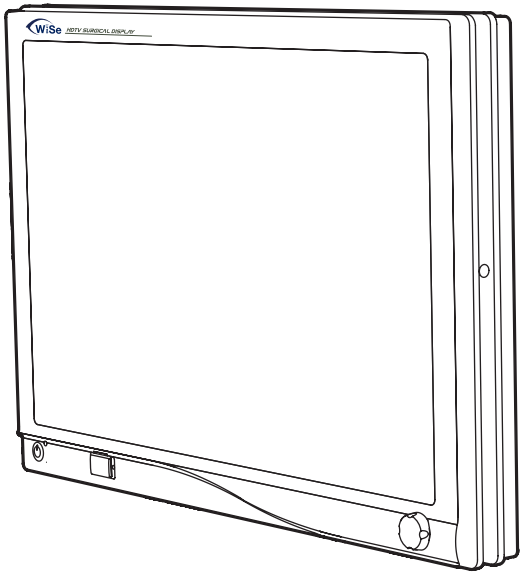
stryker®

User Guide

REF

Display 0240030970

Transmitter 0240030971



℞ ONLY

Contents

Warnings and Cautions

Please read this manual and follow its instructions carefully. The words **warning**, **caution**, and **note** carry special meaning 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.

An exclamation mark within a triangle is intended to alert the user to the presence of important operating and maintenance instructions in the manual.

A lightning bolt within a triangle is intended to warn of the presence of hazardous voltage. Refer all service to authorized personnel.

Warnings

To avoid potential serious injury to the user and the patient and/or damage to this device, please note the following warnings:

1. Read the operating manual thoroughly and be familiar with its contents prior to using this unit.
2. Carefully unpack the unit and check if any damage occurred during shipment.
3. Test this unit prior to a surgical procedure. This display was fully tested at the factory before shipment.
4. Do not place the display or any other heavy object on the power cord. Damage to the cable can cause fire or electric shock.
5. This unit is not suitable for use in the presence of a flammable anesthetic mixture with air, or with oxygen or nitrous oxide.
6. Do not put any liquid or solid object into the panel. If this occurs, unplug the unit and have it checked by qualified personnel before operating it any further.
7. Disconnect the transmitter from the electrical outlet when inspecting the fuses.
8. To avoid electric shock, avoid removing the control unit covers.

9. Ensure that the electrical installation of the relevant operating room complies with NEC and CEC guidelines.
10. Do not attempt internal repairs or adjustments not specifically detailed in this operating manual. Ensure that readjustments, modifications, and/or repairs are carried out by persons authorized by Stryker Endoscopy.
11. Use appropriate caution to prevent contact with fluids if the unit is being used with a power supply in patient environments.
12. Federal law (United States of America) restricts this unit to sale by, or on the order of, a physician.

Cautions

1. Plug the AC adapter into a grounded power outlet.
2. Use only the proprietary surgical display power supply for the display. Completely secure the connection between the DC power cord and the extension cord.
3. Connect the unit to a hospital grade receptacle to achieve grounding reliability.
4. To connect to an international power supply, use an attachment plug appropriate for the power outlet.
5. Power off the unit when it is not in use.
6. Remove the power module and connection when transporting the unit.
7. Unplug the unit if it is not to be used for an extended period of time. To disconnect the cord, unscrew the plug first, then pull the cord out by the plug. Never pull the cord itself.
8. Handle the display with care. Do not strike or scratch the screen.
9. Never operate the unit immediately after transportation from a cold location to a warm location.
10. Pay close attention to the care and cleaning instructions in this manual. A deviation may cause damage.
11. Do not expose the display to moisture or apply liquid cleaners directly to the screen. Spray the cleaning solution into a soft cloth and clean gently.
12. Do not sterilize the display or transmitter console, as the delicate electronics cannot withstand this procedure.
13. Allow adequate air circulation to prevent internal heat buildup. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots. The display is cooled by natural convection and has no fan.
14. Do not install the unit near sunlight, excessive dust, mechanical vibration, or shock.

15. Do not operate with the glass display screen facing downward.
16. Keep the unit away from equipment that uses strong magnets (i.e., large loudspeakers).
17. Do not touch the patient with signal input or output connectors. Equipment with SIP/SOP connectors should either comply with IEC 60601-1 and/or IEC 60601-1-1 harmonized national standards or the combination should be evaluated for safety.
18. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the unit.

    Note This unit has been tested and found to comply with the limit for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This unit generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation, which can be determined by turning the unit off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

    - Reorient or relocate the receiving unit.
    - Increase the separation distance between the units.
    - Connect the unit to an outlet on a circuit different from that to which the other unit(s) are connected.
    - Consult the manufacturer or field service technician for help.

19. To ensure electromagnetic compatibility, refer to the "Electromagnetic Compatibility" section of this manual. The WiSe 26" HDTV Surgical Display (model 0240030970) must be installed and operated according to the EMC information provided in this manual.

The WiSe™ 26" HDTV Surgical Display (model 0240030970 has been tested under the UL 60601-1 standard and is UL listed for medical application.

The warranty is void if any of these warnings or cautions are disregarded.

Symbol Definitions

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

Dangerous High Voltage

Direct Current

Protective Earth Ground

Wireless Transmission

Equipotentiality

Operating Pressure Ratings

Operating Humidity Ratings

Operating Temperature Ratings

Fuse Rating

Denotes compliance to CAN/ CSA C22.2 No 601.1-M90 UL60601-1.

For indoor use only

DC power control switch

This Side Up

Fragile

Do not get wet

Maximum Stacking

Medical Equipment is in accordance with UL 60601-1 and CAN/CSA C22.2 No. 601.1 in regards to electric shock, fire hazards, and mechanical hazards

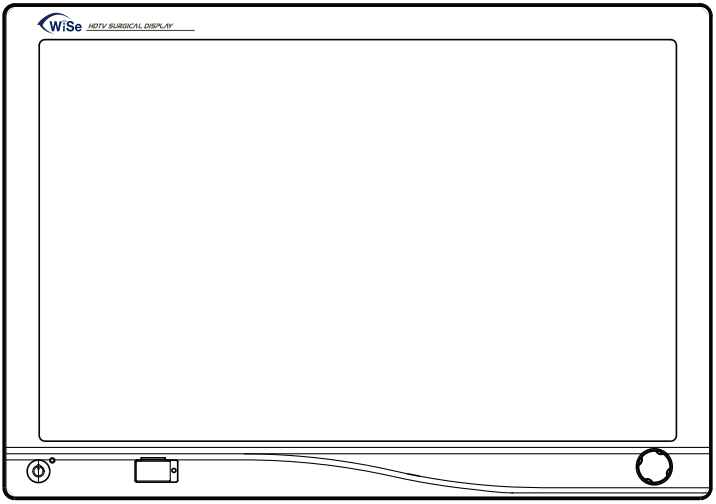
Tested to comply with FCC Class B standards

IPX1

Degrees of protection against the ingress of water

This symbol indicates that the waste of electrical and electronic equipment must not be disposed as unsorted municipal waste and must be collected separately. Please contact the manufacturer or other authorized disposal company to decommission your equipment.

Product Description



The WiSe™ 26" HDTV Surgical Display is a high-definition, wide screen LCD surgical display with a maximum resolution of WUXGA (1920 × 1200 at 60 Hz). The display supports various video inputs, including digital RGB, analog RGB, serial digital interface (SDI), component video (YPbPr/RGB), S-video, and C-video.

The display features an optional optical module accessory, which allows it to receive a high-definition video signal over fiber optic cables. It also features an optional WiSe™ HDTV Transmitter, which allows it to receive a high-definition video signal over a radio-frequency link.

Intended Use

The display is intended to display video images during the following types of surgical procedures:

- arthroscopy (orthopedic surgery)
- laparoscopy (general and gynecological surgery)
- thoracoscopy
- endoscopy (general, gastroenterological, and ENT surgery)
- general surgery

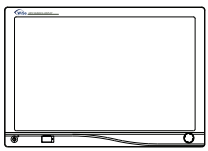
The display is a non-sterile, reusable device not intended for use in the sterile field.

Indications/Contraindications

The display is indicated for use as an accessory to an endoscopic surgical camera during general surgery, general laparoscopy, nasopharyngoscopy, ear endoscopy, sinusocopy, and plastic surgery wherever a laparoscope/endoscope/arthroscope is indicated for use.

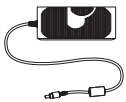
There are no known contraindications.

Package Contents



(1) WiSe™ 26" HDTV Surgical Display

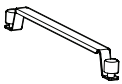
(1) User guide



(1) AC adapter
(Manufacturer: Bridgepower, Model No: JMW1150KA2400F07 or Manufacturer:FSP Group, Model No:PMP150-14)

(1) Hospital-grade AC power cord

(4) M4 × 10 mm VESA screws



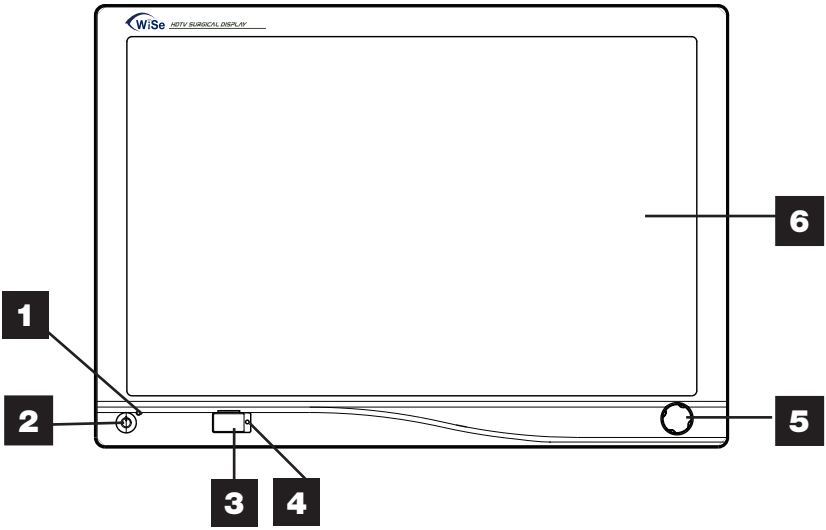
(2) Cable-management clamps

Optional Accessories (not shown)	Stryker Part Number
WiSe™ HDTV Transmitter	0240030971
15-ft. (5 pin) DC extension cable	0240030951
75-ft. (5 pin) DC extension cable	0240030952
2 – 5 pin DC convertor adapter	0240030953
Fiber optic module	0240030962

Device Features

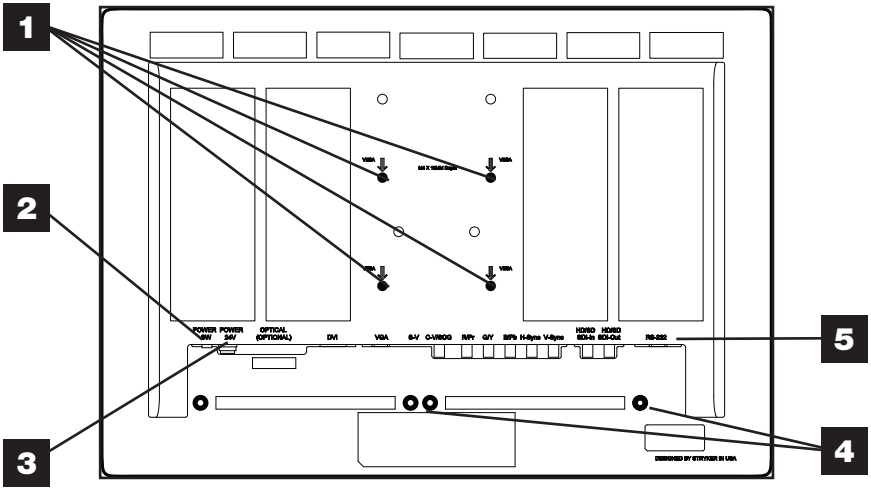
Front panel

Operate the display using the rotary control located on the front panel. A list of the display controls and their functions is provided below.



1. Power LED	Shines green if the display is powered on; blinks amber if the display is in standby mode.
2. Power switch (soft)	Powers the display ON and OFF.
3. Token slot	Token insertion site used to establish a wireless connection with the transmitter.
4. Token LED	Provides feedback when linking monitor and transmitter.
5. Rotary control	Accesses the on-screen display and navigates through its functions.
6. Display Screen	Shows video image.

Rear panel



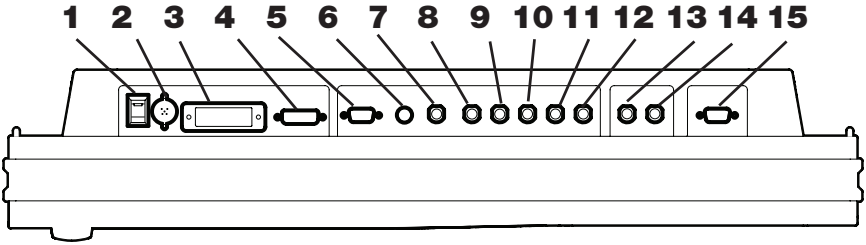
1. VESA mounting holes (100mm)	Provide access points for mounting the monitor.
2. Power switch (hard)	Powers the input DC power ON and OFF.
3. Power connector	Connects to the 24V DC power converter.
4. Cable-management clamps	Organizes cables.
5. Connector tags	Indicate the types of video connectors.

Setup and Interconnection

Stryker Endoscopy considers instructional training, or inservice, an integral part of this device. Your local Stryker Endoscopy sales representative will perform at least one inservice at your convenience to help set up your equipment and instruct you and your staff on its operation and maintenance. To schedule an inservice, contact your local Stryker Endoscopy representative after your equipment has arrived.

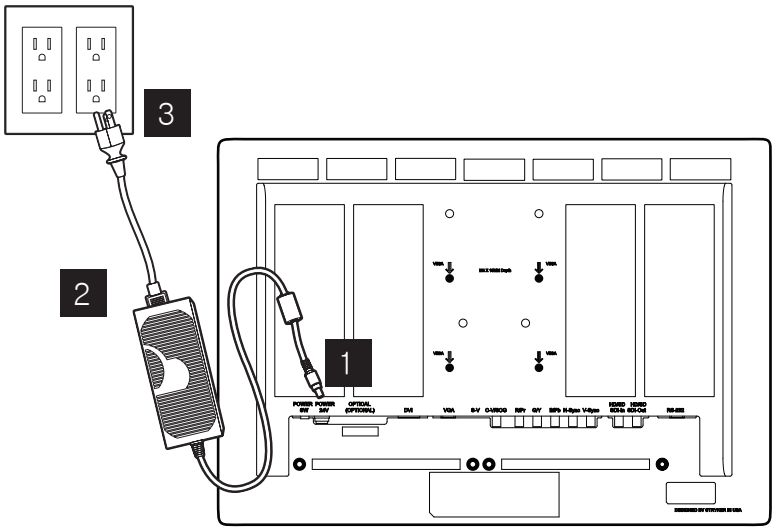
Connection Ports

Video input signals are connected to the rear of the display, as illustrated below:



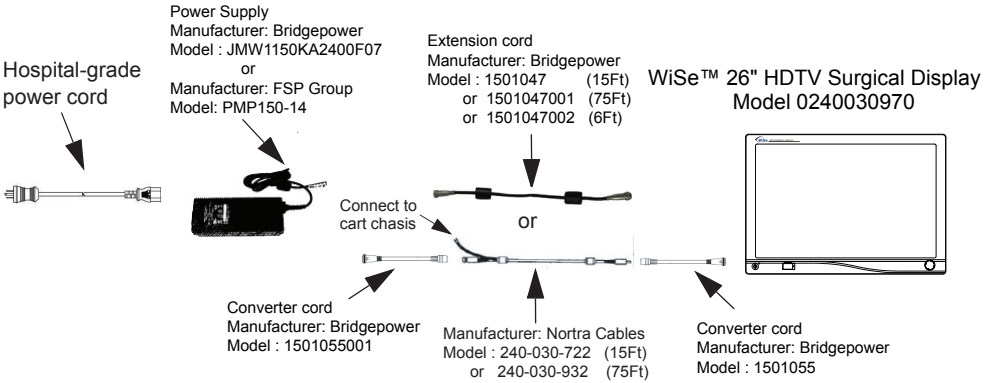
1. Power switch (hard)
2. Power 24V
3. Optical (optional)
4. DVI
5. VGA
6. S-Video
7. C-Video SOG
8. R/Pr
9. G/Y
10. B/Pb
11. H-sync
12. V-sync
13. HD/SD SDI IN
14. HD/SD SDI OUT
15. RS232

Connecting AC Power

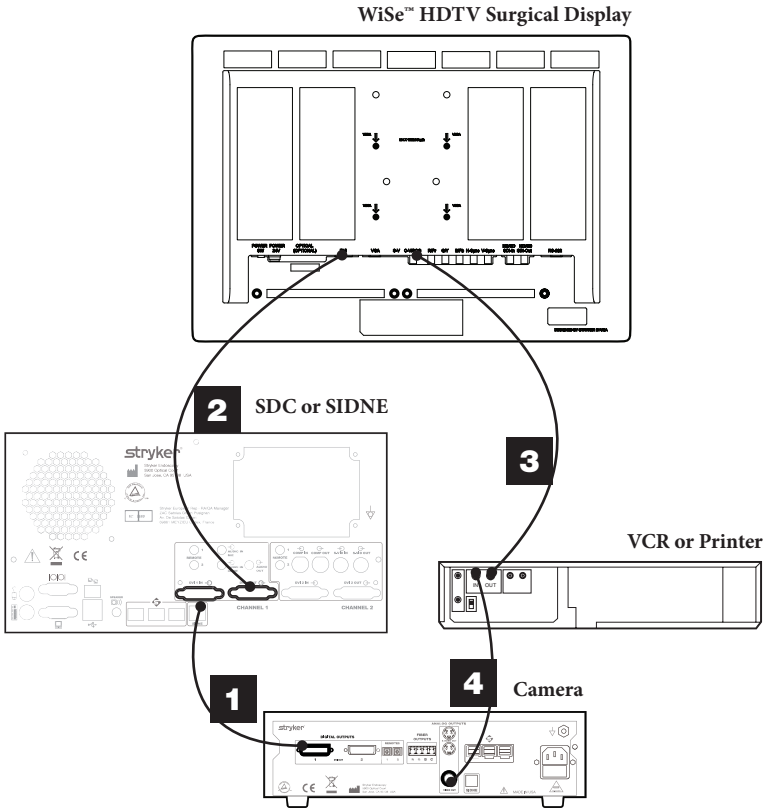


1. Connect the power supply to the 24V input on the display.
2. Connect the power cord to the power supply.
3. Connect the AC power, using the supplied hospital-grade power cord.
4. (Optional, not shown) Connect an extension cord between the power supply and the display.

Optional Extension Cord Connection



Basic Video Setup

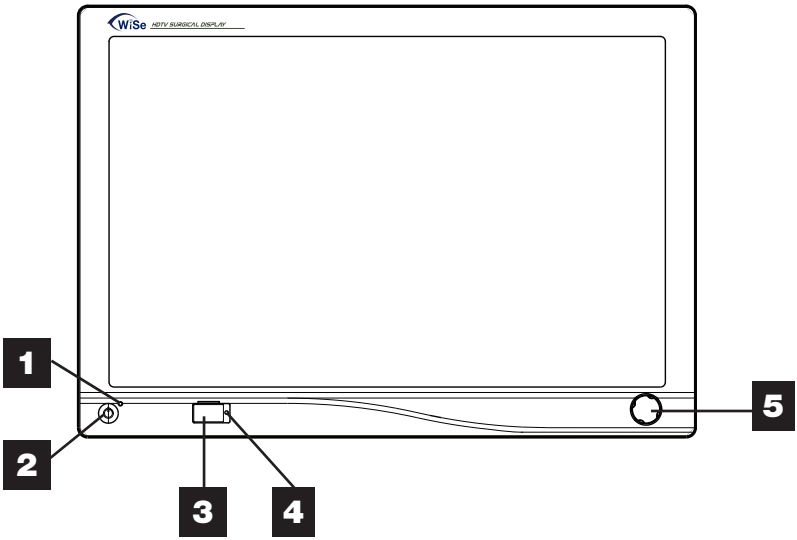


1. Route the video output 1 from the camera to the SDC or SIDNE.
2. Route the video output 1 from SDC or SIDNE to input on the DVI input on the display.
3. Connect the C-video input on the display to the C-video output on a VCR or printer.
4. Connect the C-video input on the VCR or printer to the C-video output on the camera.

Operating the Display

Accessing the On-Screen Display

Operate the display using the rotary control located on the front panel. A list of the display controls and their functions is provided below.



1. Power LED	Indicates menu current status. Displays green if display is powered on; blinks amber if display is in Standby mode.
2. Power Switch (Soft)	Turns the power ON or OFF.
3. Token Slot	Insertion site for token to enable wireless connection.
4. Token LED	Provides feedback when linking monitor and transmitter.
5. Rotary Control	**a. Turn Right/Left —** With the on-screen display menu activated, increases/decreases the value of the selected parameter. With the on-screen display deactivated, activates the video source selection menu. **b. Push —** Accesses/selects on-screen display menu. **c. Push and Hold —** Exits on-screen display menu.

Using the On-Screen Display

The device on-screen display helps navigate through various device menus.

1. Press the **Rotary Control** to activate the on-screen display (OSD) menu.
2. Rotate the **Rotary Control** to move up or down through the menu. The parameter will be highlighted when selected.
3. Press the **Rotary Control** to enter the next level OSD.
4. Rotate the **Rotary Control** to increase or decrease the value of the selected parameter, or to make a selection on different options.
5. To exit the OSD menu screen from the second — or third — level OSD menu, select the Exit option. To completely exit the OSD, press and hold the **Rotary Control**. If no keys are pressed, the OSD will automatically exit.
6. While the OSD menu is deactivated, rotate the **Rotary Control** to activate the input signal selection menu. The current input signal will be indicated by a dot. Rotate the Rotary Control to select the preferred input signal.

Stryker Camera Preset Modes

Camera	Resolution (H × V)	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
988	1024 × 768	49.09	59.90
988i	1024 × 768	41.25	50.00
1088/SDC Pro2	1024 × 768	50.03	60.00
1088i/SDC Pro2	1024 × 768	41.10	50.00
1088/1188/SDC HD	1280 × 1024	64.02	60.10
1088i/1188i/SDC HD	1280 × 1024	59.99	50.00
1188w720	1280 × 720	45.00	60.00
1188iw720	1280 × 720	37.50	50.00

On-Screen Display Menus

Item	Function Description	Range
Specialty		
Color Temperature *	Chooses between color temperatures for Standard, Arth, Lap, PACS, or Norm	
Red	Red balance	-128 – 128
Green	Green balance	-128 – 128
Blue	Blue balance	-128 – 128
Gamma	Gamma value	0.1 – 2.5, S0, S1, S2
Setting		
Brightness	Increases or decreases the brightness	0 – 100
Contrast	Increases or decreases the contrast	0 – 100
Phase**	Increases or decreases the Phase level	0 – 100
Chroma**	Increases or decreases the Chroma level	0 – 100
Image Sharpness	Sets image sharpness	1 – 10
Video Sharpness**	Increases or decreases the video sharpness	0 – 100
Image Effect		
Scale Mode	Chooses scale mode between Fill All, V-Fill, H-Fill, One-One or Fill-Aspect	
Freeze Frame	Enables or disables freeze frame	
Zoom/Pan	Enables zoom-in and pan function	
PIP	Enables PIP (picture in picture) function	
POP	Enables POP (picture on picture) function	
PBP	Enables PBP (picture by picture) function	
Advanced		
OSD Control	Controls OSD Menu Position, Background, and Time out	
Screen Control***	Controls and adjusts Horizontal, Vertical, Frequency, and Phase	
DPMS	Chooses DPMS (display power management signaling)	60min, 90min, 120min

Item	Function Description	Range
Auto Source Select	Adjusts Auto Source Select between on and off	
Restore Factory Settings	Sets to factory default	
Key Lock	Sets to key lock mode	
Wireless		
Mac ID	Unique machine ID of WiSe™ HDTV Transmitter	
Status	Status message: Receiver: RX MAC: XXXXXXXX RX SW: vXX.XX.XX Transmitter: TX MAC: XXXXXXXX TX SW: vXX.XX.XX SIGNAL: Excellent, Good, Poor REGION: US, Europe, Japan CHANNEL XXXX MHz	
Information		
User Name Entry	Enters custom user name display for boot-up display	
Serial Number	Displays device serial number	
Runtime	Displays current device run time	
Input Format	Displays current input format	

Actual on-screen display values may vary with updated versions of the firmware and user setting.

* Color Temperature RGB adjustment is available only for Standard, Arth, and Lap settings. PACS and Norm selection only available under SOG input.

** Only available under SDI-, S-, or C-video input.

*** Only available under VGA input.

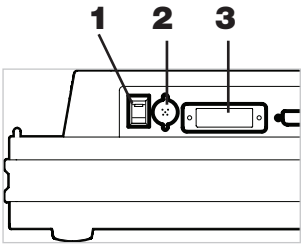
Using the Optional Fiber Optic Module

The display features an optional optical module accessory (0240030962), which allows it to receive a high-definition video signal over fiber optic cables.

Installing and Activating the Fiber Optic Module

Caution	**Excessive force or misalignment during insertion might damage the module connector.**

1. Power off the display using the hard power switch.
2. Unscrew the two screws from the cover plate, then remove the cover plate.



1. Power Switch (hard)

2. Power 24V

3. Optical Module Slot with Cover Plate

3. Insert the Fiber Optic Module into the Fiber Optic Module slot and screw into place.
4. Power on the display using the hard power switch.
5. Power off the display using the soft power switch.
6. Press and hold the soft power switch on the display for 10 seconds to activate the Fiber-Optic input from the Input Selection menu.

Input Selection List

Digital RGB	HD/SD-SDI	C-Video
Wireless RGB	Component (Y/Pb/Pr)	SOG
Analog RGB	RGBS	Exit
Digital Optical*	S-Video	

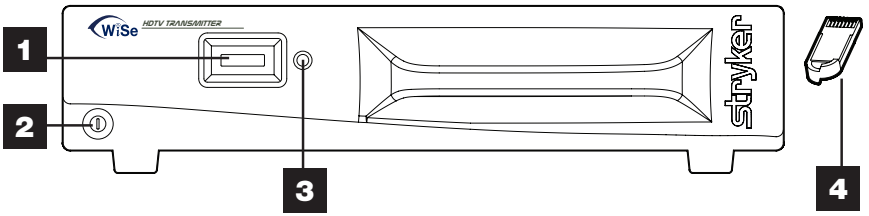
*Greyed out if module is not installed

Using the Optional WiSe™ HDTV Transmitter

The display can be used with the optional WiSe™ HDTV Transmitter (0240030971), which allows it to receive a high-definition video signal over a radio-frequency link. This link is established by means of the token, which is included with the transmitter.

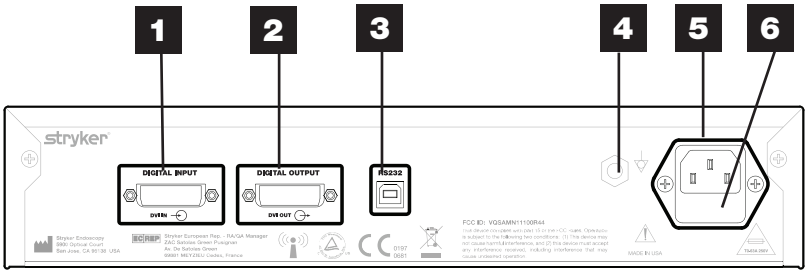
Device Features

Front Panel



1. Token Slot	Site of insertion for the token to establish a wireless connection.
2. Power switch (hard)	Powers transmitter ON and OFF.
3. Token LED	Provides feedback when linking monitor and transmitter.
4. Token	Initializes the wireless connection after insertion into the transmitter and display.

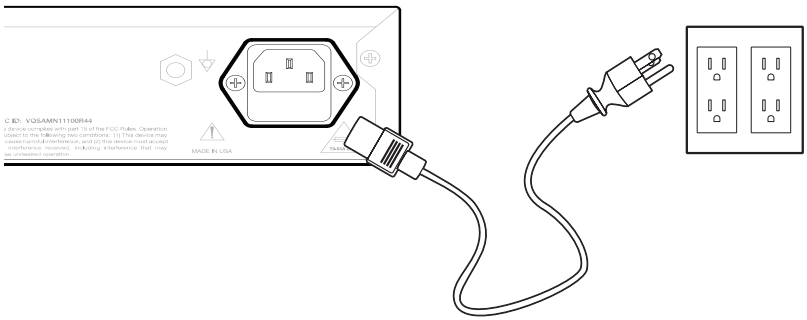
Rear Panel



1. DVI Input	Connects to camera signal.
2. DVI Output	Connects to primary display.
3. RS232 Port	Maintenance port (not for customer use).
4. Equipotential Ground Plug	
5. AC Power Inlet	Connects to separable power cord that can be used for mains isolation.
6. Fuse Panel	Contains two 0.63A fuses.

Connecting AC power

Warning **Always use the hospital-grade power cord supplied with the transmitter.**

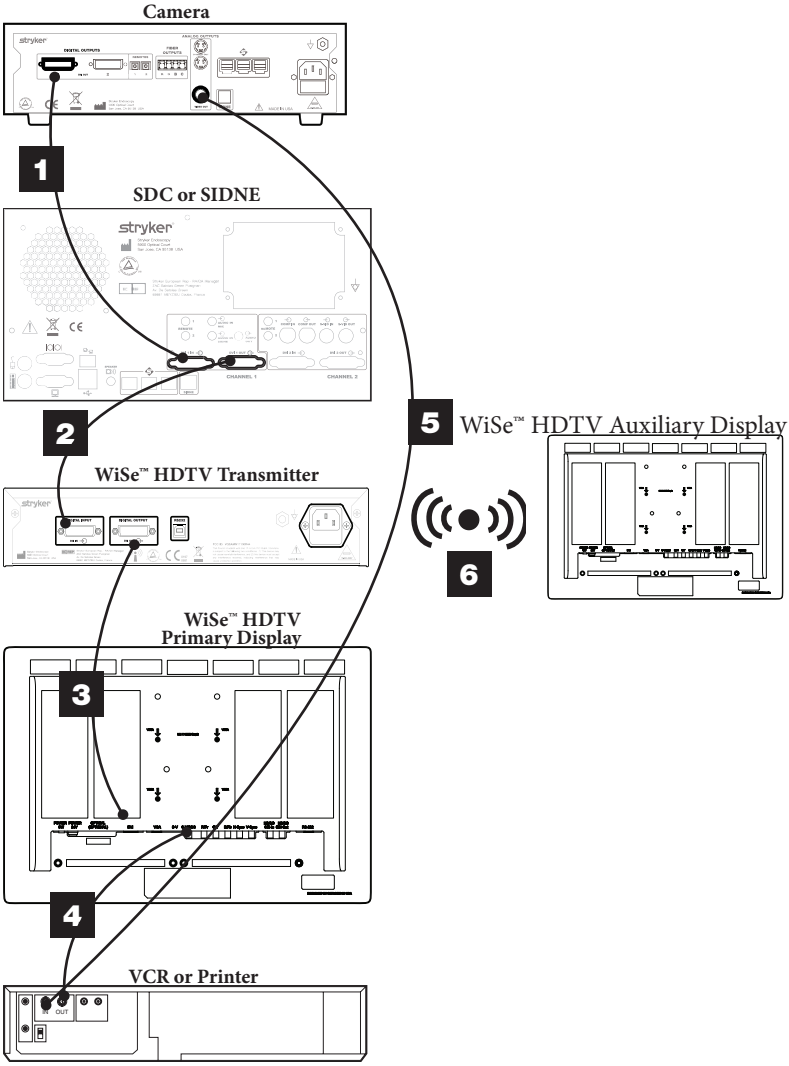


Setting Up the Optional WiSe™ HDTV Transmitter

Warning

When the transmitter is used with other equipment, leakage currents may be additive. Ensure that all systems are installed according to the requirements of IEC 60601-1-1.

Always set up the transmitter in a location that allows adequate ventilation. Insufficient ventilation may cause the transmitter to overheat and shut down.



1. Route the video output 1 from the camera to the input on the SDC or SIDNE.
2. Route the video output 1 from the SDC or SIDNE to the input on the transmitter.
3. Connect the DVI output from the transmitter to the primary display.
4. Connect the C-video input on the display to the C-video output on a VCR or printer.
5. Connect the C-video input on the VCR or printer to the C-video output on the camera.
6. Link an auxiliary display to the transmitter. (Link the display and transmitter each time the display is powered on.)

Linking the Transmitter to an Auxiliary Display

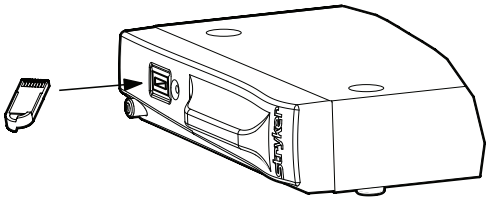
Caution	**Equipment that employs RF communications may affect the normal function of the transmitter. When choosing a location for the transmitter, consult the "Electromagnetic Compatibility" section of this manual to ensure proper function.** **In accordance with patient privacy laws, do not transmit personal patient information, such as EKG, EEG, patient name, or patient ID, over the wireless signal.**

The transmitter functions on one of eight wireless 20 MHz channels in the 4.9 – 5.9 GHz spectrum. As necessary, remove other wireless devices from the environment, such as cordless phones and 802.11a/n routers to make channels available for the transmitter and display.

To link the display to the transmitter and thereby enable wireless communication, any WiSe™ HDTV Transmitter token will suffice.

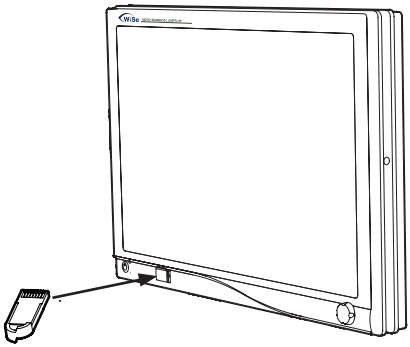
1. Power on the transmitter and auxiliary display.

2. Insert the token into the token slot on the transmitter. The token LED shines amber as it writes the data.



3. When the token LED turns green, remove the token from the transmitter.

4. Within 2 minutes, insert the token into the token slot on the auxiliary display. An audible tone will sound from the transmitter and the token LED will shine green when the display and transmitter have been linked.



7. Remove the token from the token slot on the auxiliary display.

8. Store the token in the transmitter token slot when not in use.

Note If multiple transmitters are within 100 feet of each other, link each transmitter to its respective display one at a time. Wait 15 seconds before linking the next transmitter/display pair.

Cleaning and Maintenance

Caution	**Do not expose the display to moisture or apply liquid cleaners directly to the screen. Spray the cleaning solution into a soft cloth and clean the screen gently.**

No specific liquid or chemical is necessary for cleaning the display. Use only non-abrasive cloths and cleaning solutions to clean similar equipment used in hospitals. Disconnect the display and transmitter from the AC power before cleaning.

1. Clean the plastic areas of the display with a dry, soft cloth, or a soft cloth lightly moistened with mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which might damage the finish. Acceptable cleaning agents for bezel cleaning include:
   - Cidex (2.4% glutaraldehyde solution)
   - 0.5% Chlorhexidine in 70% isopropyl alcohol

2. Apply alcohol to glass surfaces with a soft cotton applicator to aid in cleaning and drying without leaving spots or streaks.

3. Clean the display filter with a dry, soft cloth, or soft cloth lightly moistened with warm water. Other acceptable cleaning agents are listed below:
   - 70% isopropyl alcohol
   - Cidex (2.4% glutaraldehyde solution)
   - 0.5% Chlorhexidine in 70% isopropyl alcohol

4. Dry thoroughly with a soft towel or gauze surgical sponge.

Maintenance

Replacing the Fuses

Warning To avoid the risk of fire, use only fuses of the value specified on the fuse label located on the rear panel of the transmitter.

1. Unplug the power cord from the wall outlet and remove the cord from the transmitter console.
2. Unlatch the fuse holder above the AC inlet and remove it. (You may need to press the tab on the fuse holder with a slender screwdriver to release the latch.)
3. Replace the fuse with the same value and rating.
4. Reinstall the fuse holder until the tab snaps in place.

Periodic Maintenance Schedule

Warning **To ensure safe operation of the transmitter you should periodically perform the following procedure:**

Every 12 months, check the earth leakage current to <500µA (<300µA in U.S.A.), ground protective earth impedance to <0.1 ohms, and power consumption less than or equal to rated power. Use a true RMS digital multimeter and safety analyzer to perform this test.

Note Refer calibration and operating difficulties not detailed in this manual to your Stryker Endoscopy sales representative.

Disposal

This product contains electrical waste or electronic equipment. It must not be disposed of as unsorted municipal waste and must be collected separately in accordance with applicable national or institutional related policies relating to obsolete electronic equipment.

Dispose of any system accessories according to normal institutional practice relating to potentially contaminated items.

Troubleshooting

Before returning your display for service, consult the troubleshooting list below:

Problem	Current Status	Remedy
No picture	Power LED on	Using the OSD, adjust the brightness and contrast to maximum, or reset them to their default settings.
	Power LED off	Ensure the power switch at the front and back of the display are set to ON.
		Check if the AC power cord is properly connected to the AC adapter and outlet.
	Power LED blinking	Check if the video signal cable is properly connected at the back of the display.
		Check if power of the video signal source system is ON.
Abnormal picture	Oversized, undersized, or missing display; or center shift.	Using the Screen Menu, adjust the Phase, Frequency, Horizontal, and Vertical settings with non-standard video signal timing.
		Wait a few seconds after initial sync of video signals, or power cycle the display.
OSD error message	"Video format not supported"	Ensure that an acceptable video source is connected. Refer to technical specifications for a list of acceptable video formats.

Technical Specifications

Display

LCD Display Panel	64.9 cm (a-Si TFT active matrix LCD)
Synchronization	2.5 – 5.0 Vpp separated sync
Pixel Pitch	0.2865(W) × 0.2865(H)
Response Time	<25ms Typ
View Angle	±89° (L/R) × ±89° (U/D)
Display Colors	16 million colors
Native Resolution	1920 dots × 1200 dots
Input Signal	1 DVI 1 VGA 1 HD/SD-SDI 1 C-Video/SOG 1 S-Video 1 Component (Y/G, Pb/B, Pr/R, H/CS, VS) 1 Optical (optional) 1 Wireless (optional)
Maximum Pixel Clock	170MHz

Electrical

Power Adapter	100 – 240 VAC; 24 VDC
Power Consumption	150 W (max)
Current	Direct

Dimensions

Dimensions (W × H × D)	616.4 × 428.8 × 121.2mm
Weight	8.9kg
VESA Mounting Interface	VESA 100 × 100mm

Operating Conditions

Operating Temperature	41 – 90°F (5 – 32.°C)
Relative Humidity	10 – 60%
Atmospheric Pressure Range	500 – 1060 hPa
Electrical Input Rating	24V DC 6.25A

Transport & Storage Conditions

Storage	-4 – 140°F (-20 – 60°C)
Relative Humidity Range	10 – 85%
Atmospheric Pressure Range	500 – 1060 hPa

Classification and Approvals

Class I Equipment
Medical equipment with respect to electric shock, fire, and mechanical hazards only in accordance with UL 60601-1 and CAN/CSA C22.2 No. 601.1.
IPX1 Water Ingress Protection
Continuous operation

Optional WiSe™ HDTV Transmitter

Video Input

Digital:	One Digital Video Interface (DVI)
Connector:	29-pin DVI-I

Video Output

Digital:	One Digital Video Interface (DVI)
Connector:	29-pin DVI-I

Video Formats:

1920 × 1080 @ 60 Hz
1920 × 1080 @ 50 Hz
1280 × 1024 @ 60 Hz
1280 × 1024 @ 50 Hz
1280 × 720 @ 60 Hz
1280 × 720 @ 50 Hz

Operating Conditions

Temperature:	10 – 40°C
Relative Humidity:	30 – 75%

Transport and Storage Conditions

Temperature:	-20 – 60°C
Relative Humidity:	10 – 75%
Atmospheric Pressure:	700 – 1060 hPa

Input Electrical Ratings

100 – 240VAC ± 10% (0.6 A) @ 47 – 63Hz

Total Shipping Weight

6.0 kg

Dimensions

Transmitter Console:	31.8 cm w × 8.4 cm h × 38.7 cm d

Wireless

Frequency	4.9 GHz – 5.9 GHz
Channel Bandwidth	20 MHz
Channel Allocation	Automatic frequency selection with prescan
Protocol	Orthogonal Frequency Division Multiplexing (OFDM) with Multiple Input Multiple Output (MIMO)

Classification

Class II Equipment
Water Ingress Protection, IPX0 — Ordinary Equipment
Continuous Operation

Complies with Medical Safety Standards

IEC 60601-1:1988 + A1:1991 + A2:1995
CAN/CSA C22.2 No 601.1-M90
UL 60601-1:2003
AS/NZS 3200.1.0:1998
CSA 22.2.601.1.1:2002

Complies with Medical EMC Standard

IEC 60601-1-2:2001 + A1:2004

Complies with FCC Regulations

FCC 15B 2008 (Class B)

FCC Identifier: VQSAMN11100R44

Please contact your local Stryker Endoscopy sales representative for information on changes and new products.

Products referenced with ™ designation are trademarks of Stryker.

Products referenced with ® designation are registered trademarks of Stryker.

Electromagnetic Compatibility

Warning 	**When this device is connected with other electrical equipment, leakage currents may be additive. To minimize total leakage current per patient, ensure that all systems are installed according to the requirements of IEC 60601-1-1.**
Caution	**Portable and mobile RF communications equipment may affect the normal function of the display.** **Do not use cables or accessories other than those provided with the display and transmitter, as this may result in increased electromagnetic emissions or decreased immunity to such emissions.** **If the display is used adjacent to or stacked with other equipment, observe and verify normal operation of the display and transmitter 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 display and transmitter.**

Like other electrical medical equipment, the WiSe™ 26 " HDTV Surgical Display and WiSe™ HDTV Transmitter requires special precautions to ensure electromagnetic compatibility with other electrical medical devices. To ensure electromagnetic compatibility (EMC), the display and transmitter must be installed and operated according to the EMC information provided in this manual. The display and transmitter have been designed and tested to comply with IEC 60601-1-2:2001 requirements for EMC with other devices.

<table>
<tr><th colspan="3">Guidance and Manufacturer’s Declaration: Electromagnetic Emissions</th></tr>
<tr><td colspan="3">The WiSe™ 26″ HDTV Surgical Display and WiSe™ HDTV Transmitter is intended for use in the electromagnetic environment specified below. The customer or the user of the WiSe™ 26″ HDTV Surgical Display and WiSe™ HDTV Transmitter should ensure that it is used in such an environment.</td></tr>
<tr><th>Emissions test</th><th>Compliance</th><th>Electromagnetic Environment - guidance</th></tr>
<tr><td>RF emissions CISPR 11</td><td>Group 1</td><td>The WiSe™ 26″ HDTV Surgical Display and WiSe™ HDTV Transmitter 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.</td></tr>
<tr><td>RF emissions CISPR 11</td><td>Class B</td><td rowspan="3">The WiSe™ 26″ HDTV Surgical Display and WiSe™ HDTV Transmitter is suitable for use in all establishments other than 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 is intended for use by health care professionals only. This system may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as reorienting or relocating the system or shielding the location.</td></tr>
<tr><td>Harmonic emissions IEC61000-3-2</td><td>Class D</td></tr>
<tr><td>Voltage Fluctuations/ flicker emissions IEC61000-3-3</td><td>Complies</td></tr>
</table>

Guidance and Manufacturer's Declaration — Electromagnetic Immunity			
The WiSe™ 26″ HDTV Surgical Display and WiSe™ HDTV Transmitter is intended for use in the electromagnetic environment specified below. The customer or the user of the WiSe™ 26″ HDTV Surgical Display and WiSe™ HDTV Transmitter 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	6kV contact 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 1kV for input/ output lines	2kV line to ground 1kV line to line	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC61000-4-5	1kV differential mode 2kV common mode	1kV differential mode 2kV common mode	Mains power quality should be that of a typical commercial or hospital environment
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 40% Ut (60% dip in Ut) for 5 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 0.5 cycle 40% Ut (60% dip in Ut) for 5 cycles 70% Ut (30% dip in Ut) for 25 cycles <5% Ut (>95% dip in Ut) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Wireless Transmitter requires continued operation during power mains interruptions, it is recommended that the Wireless Transmitter be powered from an uninterruptible power supply or a battery.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3.0 A/m	3.0 A/m	Power-frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: Ut is the AC mains voltage prior to application of the test level.			

Guidance and Manufacturer's Declaration: Electromagnetic Immunity			
The WiSe™ 26" HDTV Surgical Display and WiSe™ HDTV Transmitter is intended for use in the electromagnetic environment specified below. The customer or the user of the WiSe™ 26" HDTV Surgical Display and WiSe™ HDTV Transmitter should ensure that it is used in such an environment.			
Immunity Test	IEC 60601 Test level	Compliance Level	Electromagnetic Environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	Portable and mobile RF communications equipment should be used no closer to any part of the WiSe™ HDTV Transmitter system, including its cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended Separation Distance** d = 1.17√P
Radiated RF IEC 61000-4-3	3 V/m 80MHz to 2.5 GHz	3 V/m	d = 1.17√P 80 MHz to 800 MHz d = 2.33√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 than 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 WiSe™ 26" HDTV Surgical Display is used exceeds the applicable RF compliance level above, the display and transmitter should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the WiSe™ 26" HDTV Surgical Display. (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 WiSe™ 26" HDTV Surgical Display

The WiSe™ 26" HDTV Surgical Display is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The user of the WiSe™ 26" HDTV Surgical Display can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the WiSe™ 26" HDTV Surgical Display 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.

Warranty and Return Policy

Product Warranty

Stryker Endoscopy warrants all products, subject to the exceptions provided herein, to be free from defects in design, materials, and workmanship and to substantially conform to the product specifications contained in the documentation provided by Stryker Endoscopy with the products for a period of one year from the date of purchase (the "Warranty Period"). This warranty shall apply only to the original end-user purchaser of products directly from Stryker Endoscopy or a Stryker Endoscopy authorized distributor. This warranty may not be transferred or assigned without the express written consent of Stryker Endoscopy.

If a valid warranty claim is received within the Warranty Period, Stryker will, in its sole discretion: (1) repair the product at no charge, (2) replace the product at no charge with a product that is at least functionally equivalent to the original product, or (3) refund the purchase price of the product. In any event, Stryker's liability for breach of warranty shall be limited to the replacement value of the defective or non-conforming part or component.

This warranty does not apply to: (1) products that have been misused, neglected, modified, altered, adjusted, tampered with, improperly installed or refurbished; (2) products that have been repaired by any person other than Stryker Endoscopy personnel without the prior written consent of Stryker Endoscopy; (3) products that have been subjected to unusual stress or have not been maintained in accordance with the instructions in the user manual or as demonstrated by a Stryker Endoscopy representative; (4) products on which any original serial numbers or other identification marks have been removed or destroyed; or (5) products that have been repaired with any unauthorized or non-Stryker components, including replacement lamps.

If Stryker determines in its reasonable discretion that the claimed defect or non-conformance in the product is excluded from warranty coverage as described hereunder, it will notify the customer of such determination and will provide an estimate of the cost of repair of the product. In such an event, any repair would be performed at Stryker's standard rates.

Products and product components repaired or replaced under this warranty continue to be warranted as described herein during the initial Warranty Period or, if the initial Warranty Period has expired by the time the product is repaired or replaced, for thirty (30) days after delivery of the repaired or replaced product. When a product or component is replaced, the item provided in replacement will be the customer's property and the replaced item will be Stryker's property. If a refund is provided by Stryker, the product for which the refund is provided must be returned to Stryker and will become Stryker's property.

The inspection, testing, acceptance, or use of the products and services furnished

hereunder shall not affect Stryker's obligation under this warranty, and such warranty shall survive inspection, test, acceptance, and use.

Notwithstanding the above, the following products are warranted for a period of ninety (90) days from the date of purchase: Scopes, Associated Scope Hardware, Fiber Optic Cables, Laparoscopic Instruments, VCRs, Monitors, and Printers; replacement light bulbs are warranted for a period of sixty (60) days from the date of purchase.

TO THE FULLEST EXTENT PERMITTED BY LAW, THE EXPRESS WARRANTY SET FORTH HEREIN IS THE ONLY WARRANTY APPLICABLE TO THE PRODUCTS AND IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTY BY STRYKER, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. EXCEPT AS SPECIFICALLY PROVIDED IN THIS WARRANTY AND TO THE EXTENT PERMITTED BY LAW, STRYKER IS NOT RESPONSIBLE FOR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR UNDER ANY OTHER LEGAL THEORY.

Return Policy

Stryker Endoscopy values customer relationships and strives for satisfaction in purchases made by our customers. Therefore, we offer a return policy for most products. Under this policy, customers may return purchased products to Stryker Endoscopy, within 90 days of customer's receipt of the product, for a credit or a refund of the purchase price paid, less shipping and handling and applicable restocking fees. Products that fail after the first 90 days may be covered by and are subject to the terms of applicable product warranty. Sterile products may not be returned for credit or refund unless they are in their original, unopened packaging or unless they are in breach of the applicable warranty.

Restocking Fees: Unless the product is defective or the return is the direct result of a Stryker Endoscopy error, a restocking fee of 10% may be charged on all returned products.

A Returned Merchandise Authorization (RMA) number must be obtained from Stryker Endoscopy before returning product. To obtain an RMA number, please contact Stryker Endoscopy Customer Service at 1.800.624.4422.

Please send any returned products to:

Stryker Endoscopy
Attn: Returns
5900 Optical Court
San Jose, CA 95138

With the return, please include the following:

1. RMA number
2. Purchase order number
3. Original invoice number
4. Name, address, and account number (of the organization returning the product)
5. Itemized list of the items being returned
6. Reason for the return
7. Product Experience Report/Complaint number, if applicable

Please carefully package the product being returned. Credit will not be given for items that are damaged in return shipment due to inadequate packaging.

Stryker Endoscopy does not accept any COD returns. Return shipping costs are borne by the customer unless Stryker Endoscopy specifically agrees otherwise.

Please clean and sterilize all potentially contaminated products prior to returning them to Stryker Endoscopy. It is unlawful to transport bio-contaminated products through interstate commerce, unless they are properly packaged and labeled as such. Stryker Endoscopy reserves the right to destroy contaminated product at the customer's expense and charge the customer for a replacement unit.

If a return does not comply with these terms, Stryker Endoscopy reserves the right to destroy the product at the customer's expense. Any replacement would be at the customer's expense.

stryker®

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EC REP

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