

# *acclaim*<sup>®</sup>

## Intraoral Digital Video Camera System

Part Number A5300

## Operator's Manual



**AIR  
TECHNIQUES  
INC.**

**ALLPRO IMAGING**

**ISO**  
**9001**  
ISO 13485  
FDA-GMP COMPLIANT

# FOREWORD

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Air Techniques and its ALLPRO Imaging division have prepared this document as a guide to the proper use of the Acclaim® Intraoral Digital Video Camera System. References in this manual to Air Techniques includes its division ALLPRO Imaging.

Refer to the following companion documents as necessary:

<u>Document</u>	<u>Part Number</u>
Acclaim Handpiece Instruction Sheet	A5537

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# CONGRATULATIONS

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Congratulations on your purchase of the Acclaim® Intraoral Digital Video Camera System, the latest camera in the dental video imaging product line from Air Techniques, a leading manufacturer of dental, medical and veterinary equipment since 1962.

The Acclaim System design offers the benefits of a flexible and reliable image capturing system that is easily integrated into any practice. The very lightweight one-piece toothbrush-size Acclaim Camera Handpiece is an extremely maneuverable instrument, which produces crisp, clear images.

In addition to providing quality high-resolution images, the Acclaim Camera Handpiece is a versatile addition that can grow with your practice. Using a quick-disconnect feature the Acclaim Camera Handpiece quickly detaches and is easily carried among patient operatories for use with other Acclaim System components.

Start with a single counter-top Acclaim System and, as your practice and your requirements grow, add cameras, control modules, monitors, printer etc. Even integrate your Acclaim System with your existing computerized practice management software system.

This manual covers the installation, operation and maintenance of:

- Acclaim Camera Handpiece with Control Module,  
Power Supply Adapter and Cables . . . . .A5300
- Acclaim Camera Handpiece . . . . .A5520
- Control Module with Power Supply Adapter and Cables . . . .A5350

Review and follow the guidelines included in this Operator's Manual to ensure that your Acclaim System gives you the highest level of service.

For product support and information on how to expand your Acclaim System, contact your authorized Air Techniques dealer.

# WARRANTY

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This Air Techniques equipment is warranted to be free from defects in material and workmanship from the date of installation for a period of 3 years.

Any item returned to our factory through your authorized Air Techniques dealer, will be repaired or replaced at our option at no charge provided that our inspection shall indicate it to have been defective. Dealer labor, shipping and handling charges are not covered by this warranty.

This warranty does not apply to damage due to shipping, misuse, careless handling or repairs by other than authorized service personnel. Warranty void if installed or serviced by other than your authorized Air Techniques dealer service personnel. Air Techniques, Inc. is not liable for indirect or consequential damage or loss of any nature in connection with this equipment. This warranty is in lieu of all other warranties expressed or implied. No representative or person is authorized to assume for us any liability in connection with the sale of our equipment.

## ON-LINE WARRANTY REGISTRATION

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Quickly and easily register the Acclaim System on-line. Just have your product model and serial numbers available. Then go to either the Air Techniques website, [www.airtechniques.com](http://www.airtechniques.com), or the AllPRO Imaging website, [www.allproimaging.com](http://www.allproimaging.com), click the **warranty link** and complete the registration form. This on-line registration ensures a record for the warranty period and helps us keep you informed of product updates and other valuable information.

## SAFETY NOTICE

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### GENERAL

This equipment has been designed to minimize exposure of personnel to hazards. While the Acclaim System is designed for safe operation, certain precautions must be observed. Use of the Acclaim System not in conformance with the instructions specified in this manual may result in permanent failure of the unit.

### KNOWLEDGE OF WARNINGS AND CAUTIONS

Users must exercise every precaution to ensure personnel safety, and be familiar with the warnings and cautions presented throughout this manual and summarized below.

**CAUTION:** There are no user-serviceable parts inside. Servicing should be performed by qualified dealer service representatives only.

- Connecting any device to the Acclaim System that does not meet the equivalent safety requirements of the system may reduce the safety effectiveness of the Acclaim System.
- Turn off power and unplug the system components before performing cleaning procedures.

**WARNING:** To prevent fire or electrical shock, do not expose this equipment to rain or moisture.

- Do not spray cleaning liquids or disinfectant directly on the camera hand-piece or the USB Umbilical. Use care not to allow liquids to run into internal circuitry.
- Do not wipe the surfaces using benzine, thinner, etc. as this may degrade the finish.

# SAFETY NOTICE

## **DO NOT ATTEMPT INTERNAL SERVICE**

The interior of each component of the Acclaim System is only accessible by removing hardware with tools and should only be opened and serviced by an authorized service technician. Please contact your local authorized dealer for service. Failure to heed this warning may result in equipment damage and voiding the warranty.

### **Markings.**

The following terms or symbols are used on the equipment, on the serial number label or in this manual to denote information of special importance:



Alerts users to important Operating and Maintenance instructions. Read carefully to avoid any problems.



Warns users that uninsulated voltage within the unit may be of sufficient magnitude to cause electric shock.



Indicates type B equipment in accordance with IEC 60601-1



Alerts users that the infection control sheath must be used for only one patient and disposed of properly in accordance with local code.



Identifies the name of the manufacturer.



Indicates date of manufacture

### **Use of Accessory Equipment.**

The use of ACCESSORY equipment not complying with the equivalent safety requirements of this equipment may lead to a reduced level of safety of the resulting system. Consideration relating to the choice shall include:

Use of the accessory in the PATIENT VICINITY

Evidence that the safety certification of the ACCESSORY has been performed in accordance to the appropriate IEC 60601-1 and/or IEC 60601-1-1 harmonized national standard.

Use of ACCESSORIES or cables other than those specified or provided by Air Techniques or its ALLPRO Imaging division may result in increased EMISSIONS or decreased IMMUNITY of the EQUIPMENT.

# **IMPORTANT INFORMATION**

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## **General Notes.**

- All instructions in this manual form an integral part of the unit. They must be kept close to the unit and in readiness whenever required. Precise observance of these instructions is a pre-condition for use of the unit for the intended purpose and for its correct operation. This manual should be passed on to any future purchaser or operator.
- Safety of the operator as well as trouble-free operation of the unit are only ensured if use is made of original equipment parts. Moreover, use may only be made of those accessories that are specified in the technical documentation or that have been expressly approved and released by the manufacturer for the intended purpose. The manufacturer cannot warranty for the safety or proper functioning of this unit in the case where parts or accessories are used that are not supplied by the manufacturer.
- There is no guarantee against damage arising where parts or accessories are used that are not supplied by the manufacturer.
- Observe the usage and storage conditions.
- The Acclaim System may only be operated using authorized software.
- The manufacturer regard themselves as being responsible for the equipment with regard to safety, reliability and proper functioning only if assembly, resetting, changes or modifications and repairs have been carried out by an authorized dealer and if the equipment is used in conformity with the instructions contained in this manual.
- The device conforms to the relevant safety standards valid at this time.
- Any reprinting of the technical documentation, in whole or in part, is subject to prior written approval by the manufacturer.

## **Incorrect Usage**

- Any use that is not described in this manual as correct usage is considered as incorrect usage. The manufacturer is not to be held liable for any damage caused as a result of incorrect usage. The operator bears all risks.

# BOX CONTENTS

The Acclaim System is comprised of a Camera Handpiece and Control Module. Each is boxed separately along with associated accessories and is available individually by their selling numbers A5520 and A5350 respectively. When shipped together as a complete Acclaim System, the separate boxes are packed in a single box as selling number A5300.

The following lists the components included with the Acclaim System.

Item	Supplied	Part No.
Contents of A5520 Camera Handpiece Box		
Camera Handpiece Assembly	1	A5520
Disposable Infection Control Sheaths for Camera Handpiece	20	See Page 26
Camera Handpiece Instructions	1	A5537
Contents of A5350 Control Module Box		
Control Module	1	A5350
Power Supply Adapter	1	A5135
15-foot Multi-Conductor Camera Handpiece Umbilical Cable Assembly	1	A5105
6-foot Composite Video Cable Assembly, RCA/RCA	1	77389
6-foot High Speed USB Cable Assembly, Type A/Type B	1	B3554
Camera Handpiece Holder	1	A5145
Dual-Lock Fastener	1	A5155
Operator's Manual	1	A5301
CD containing - WDM video drivers for DirectX 9 compliant streaming video capture software applications. USB Video Diagnostic Software PDF version of Operator's Manual	1	A5151 (Rev F or later)

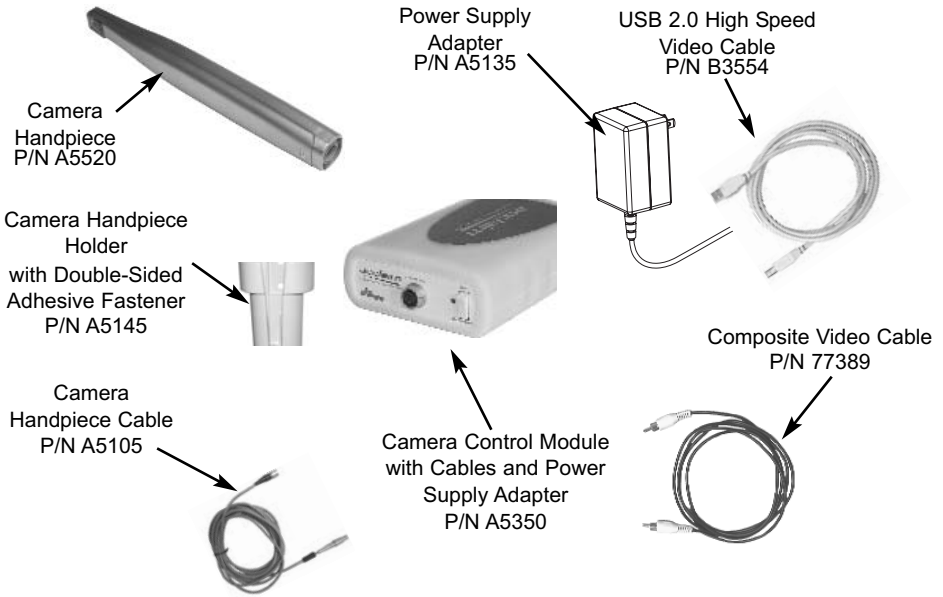
## UNPACKING AND INSPECTION

Unpack each component of the Acclaim System and inspect for physical damage such as scratched panels, damaged connectors, etc. If any damage is noted, immediately notify your Air Techniques authorized dealer immediately so corrective action can be taken.

Make sure to save all packaging material in case repackaging and shipment is necessary. Verify that all listed items were received. If any item is missing, notify your Air Techniques authorized dealer.

# KEY PARTS IDENTIFICATION

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A5300 Acclaim System Key Parts Identification

## COMPONENT DESCRIPTION

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The Acclaim Systems is an intraoral camera system designed for dental applications that consists of the Camera Handpiece with holder, Control Module, Power Supply Adapter and associated cables as described below.

**NOTE:** Air Techniques' VISIX Imaging Software is fully compatible with the Acclaim System. Contact your authorized Air Techniques dealer to acquire VISIX.

**Camera Handpiece** - The Camera Handpiece, part number A5520, is extremely lightweight with a high resolution, high sensitivity, auto-exposure controlled CCD sensor and a high performance lens system illuminated by ultra-bright white LED lamps. The fixed focus lens has a broad depth of field bringing all objects measuring between 6 and 50 mm into focus enabling the camera to finely detail a section of a single tooth to a full smile. The Camera Handpiece has 2 keypad buttons that provide fingertip operating control of the system. The specific functions performed by the keypad buttons depend on system hardware and software installation configurations.

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## COMPONENT DESCRIPTION

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**A5350 Control Module** - The Control Module, part number A5350, is the single-point interconnection interface between the Camera Handpiece and a computer and/or video monitor as required. This Control Module is designed to connect to a PC with USB streaming video capture software or to a PC with an installed capture card and associated video capture software. When connected to a PC, the live video images taken by the Camera Handpiece are displayed on the computer monitor and can be saved on the computer's hard disk via the video capture software application. When operated directly connected to only a video monitor, the connected monitor displays high-resolution live video images taken by the Camera Handpiece.

The Control Module, A5350, is also compatible with the Camera Handpiece, A5020, included on earlier Acclaim Systems sold under selling number A5000. Contact your authorized dealer for further information.

**Power Supply Adapter** - The 15-watt power supply adapter, part number A5135, connects to the Control Module to provide 12 VDC power for operating the Acclaim System.

**Camera Handpiece Holder with Double-Sided Adhesive Fastener** -

The Camera Handpiece Holder, part number A5145, can be fastened in a convenient location for safe storage of the Camera Handpiece when it is not in use. In addition to storage, the Camera Handpiece Holder also has built-in magnet that turns off the Camera Handpiece power. This feature conserves energy and equipment wear so the camera is ready and operational when needed.

**Camera Handpiece Cable** - This 15-foot multi-conductor cable with quick-disconnect connectors at each end (part number A5105) interconnects between the Camera Handpiece and the Control Module providing all power, video output and control for camera operation. Optional 6, 9, 30 and 50-foot length cables are available from your Air Techniques Dealer.

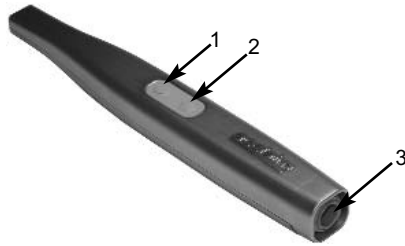
**USB 2.0 High Speed Cable** - A 6-foot USB 2.0 cable, part number B3554 that connects between the Control Module and the user's computer. Provides a digital video and camera button control output for use with a PC with user-supplied compatible streaming video capture software application.

**Composite Video Cable** - A 6-foot composite video cable, part number 77389, is used to connect between the Control Module and external video monitor or computer with video capture card for direct viewing.

# HANDPIECE KEYPAD FUNCTIONS

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## Acclaim Camera Handpiece A5520



**Keypad Buttons** - Each keypad button provides the Acclaim Camera Handpiece fingertip control over the PC streaming video capture software via the USB cable. The buttons may be used with any video capture software (such as VISIX) that supports a 2-button joystick type footswitch. The specific functions performed by the keypad buttons depend on the video capture software used. Typical keypad actions provided below.

**NOTE:** Simultaneously depressing both keypad buttons for approximately 3 seconds deactivates the Camera Handpiece LED light source. This is commonly used when imaging an X-ray on a light box.

- |                          |   |
|--------------------------|---|
| (1) Top Keypad Button    | Sends a Footswitch <i>Button 1</i> command to the PC via the USB cable. While the specific function performed depends on the setting of the video capture software application installed on the PC, this command typically freezes and unfreezes the image that is displayed on the computer monitor. |
| (2) Bottom Keypad Button | Sends a Footswitch <i>Button 2</i> command to the PC via the USB cable. While the specific action performed depends on the video capture software installed, it typically saves the image displayed on the computer monitor to the computer hard disk.  |
| (3) Handpiece Connector  | An 8-pin connector socket that accepts the connection of the keyed 8-pin quick disconnect plug end from the multi-conductor Handpiece cable. Makes connection between the Camera Handpiece and Control Module to provide power, video and control for the Acclaim Camera.                             |

# CONTROL MODULE FUNCTIONS

## Control Module A5350 Front Panel Controls and Indicators



CAMERA Connector

A 10 pin connector socket that accepts connection of the keyed 10-pin quick disconnect plug end from the multi-conductor Handpiece cable. Makes connection between the Camera Handpiece and Control Module to provide power, video output and control for the camera.

Power Indicator Lamp

A green LED lamp that illuminates to indicate the presence of 12 VDC operating power from the power supply adapter.

STANDBY/ON Switch

A rocker panel switch that controls the application of 12 VDC operating power from the Power Supply Adapter.

When set in the ON position, the 12 VDC is applied, the LED power indicator lamp illuminates, and the camera is operational.

The 12 VDC is removed and the camera is turned off when the switch is set in the STANDBY position and the LED power indicator lamp extinguishes.

## Control Module A5350 Rear Panel Connectors



12 VDC Connector

Provides connection of the 12 VDC operating power from the Power Supply Adapter.

S-VIDEO Connector

A 4-pin Mini DIN connector that provides output connection for S-Video peripherals (e.g. video monitor or computer with capture card).

VIDEO Connector

An RCA connector that provides connection for composite video peripherals (e.g. video monitor or computer with capture card).

USB Connector

A USB type B connector that provides connection to the USB 2.0 High Speed port of the computer.

# PRE-INSTALLATION INFORMATION

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**IMPORTANT:** When operating the Acclaim System connected to the USB port on a Computer System, the computer must be loaded with an Air Techniques Authorized DirectX 9 compliant streaming video software application such as VISIX. Contact your dealer for available Computer Systems and software options.

**NOTE:** VISIX Imaging Software is fully compatible with Acclaim Systems.

**Minimum Computer System Requirements** - The Computer System (laptop or computer, monitor, etc.) and any related peripheral or other equipment, supplied by the user, or a third party, must comply with the requirements for accessory Equipment as specified in the appropriate IEC 60601-1 and/or IEC 60601-1-1 harmonized national standard.

Unless otherwise stated, the components of the computer system must comply with the minimum requirements listed below.

- |                        |   |
|------------------------|---|
| Operating System:      | * Windows 2000 Professional for an Intel 32-bit processor with Service Pack 4, and the KB 820759 update or later or<br>* Windows XP Professional for an Intel 32-bit processor with Service Pack 1 and the KB 822603 update or later. |
| USB Port:              | Must be USB 2.0 high speed port.  |
| CPU Speed:             | Pentium 4, 2 GHz or higher  |
| System RAM:            | 256 MB  |
| Video Display Adapter: | 16 MB video card with 800 x 600 pixel resolution and 32-bit color.  |
| Imaging Software:      | DirectX 9 compliant streaming video software application installed.   |

## Recommended Components -

- |               |   |
|---------------|---|
| CD ROM Drive: | 24X or higher                                 |
| Monitor:      | SVGA 17" with 800 x 600 resolution or higher. |

## System Properties.

If unsure of the operating system version installed, check that it meets the necessary requirements by checking the **System Properties** window.

This is done simply by right clicking the **My Computer icon**. Selecting **Properties** from the menu list displays the **System Properties** window as shown. The installed operating system version is listed under the **General Tab**.

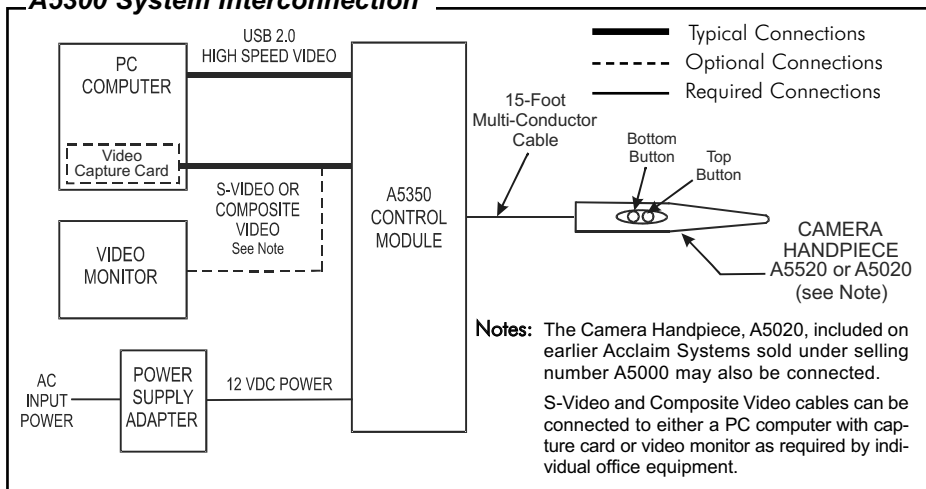
The **System Properties** window can also be displayed from the Desktop **Start** button. Just press the **Start** button and select **Settings→Control Panel** and then **System**.



# SYSTEM INTERCONNECTIONS

**A5300 Acclaim System** - The diagram below shows the possible interconnections for the A5300 Acclaim System using the A5350 Control Module. The heavy solid connection lines designate the typical operating configuration (connected to a computer system). The dashed line shows the optional connection to a video monitor, while the lighter solid connection lines show camera and power connections common to all system setups. Connect the A5300 System as required by individual office equipment.

## A5300 System Interconnection



## INSTALLATION

Installing the Acclaim System is as simple as deciding where to place the Control Module and making the necessary cable connections to a video monitor and/or a PC loaded with an Air Techniques Authorized DirectX 9 compliant user-supplied streaming video software application. Perform the following procedures to install the Acclaim System.

**Control Module Location** - Locate the Acclaim Control Module on a table top, cart or any flat stable surface convenient to an AC wall outlet and associated computer system/monitor. Make sure that the selected location allows easy access to front and rear panel controls and connectors.



Use care when adhering the Dual Lock Fastener to selected surface. The adhesive fastens quickly and permanently.

**Control Module Hanging Option** - The Control Module can also be installed hanging under a table top, under the chair or on the computer using the supplied Dual Lock Fastener Kit P/N A5155. Refer to the instruction sheet provided with the Dual Lock Fastener Kit for procedures to apply the fastener to the Control Module when using the hanging option.

# INSTALLATION



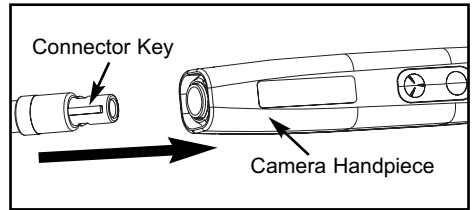
Do not twist or turn the cable connectors. The USB Umbilical connectors are keyed and mate straight on with the associated Camera Handpiece and Control Module connectors.

**NOTE:** In addition to the supplied 15-foot multi-conductor cable, optional 6, 9, 30 and 50-foot lengths are available from your authorized Air Techniques Dealer at an extra cost.

**Camera Cable Connection** - Carefully connect the supplied Camera Handpiece Cable between the Camera Handpiece and Control Module as follows:

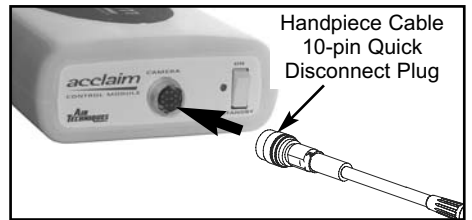
## Camera Handpiece Connection.

1. Using the gray molded connector cable end, align the connector key with the keyway of the Handpiece connector.
2. Insert straight into Handpiece connector until it securely snaps into place.



## Control Module Connection

1. Using the 10-pin quick disconnect plug end, align connector key with the keyway of the mating CAMERA connector located on the front panel of the Control Module.
2. Insert the connector straight into the mating CAMERA connector until it securely snaps into place.



Use care when adhering the handpiece holder to selected surface. The double-sided adhesive fastens quickly and permanently.

**Camera Handpiece Holder Installation** - Using the supplied double-sided adhesive fastener, the Camera Handpiece Holder, part number A5145, can be fastened to any convenient location for safe storage of the Camera Handpiece Cable or Camera Handpiece when not in use.

Install the Camera Handpiece Holder as follows:

1. Remove the protective film from the double-sided adhesive on the Handpiece Holder
2. Attach the Camera Handpiece Holder to a flat, clean dry surface where the Acclaim Camera Handpiece or Camera Handpiece Cable can be located for convenient storage.

**USB Digital Video/Button Control Connection Options** - Refer to corresponding figure below and perform the following procedure to connect the USB 2.0 High Speed output of the Acclaim Control Module to the associated PC computer as desired.

1. Connecting Directly to PC. Connect the supplied 6-foot USB 2.0 high-speed cable between the USB connector located on the rear of the Control Module to be connected and directly to the USB 2.0 high speed port on the computer.
2. Connecting via High Speed Hub. Connect the supplied USB 2.0 high-speed cable between the USB connector located on the rear of the Control Module to be connected and the USB 2.0 High Speed Hub. If necessary, connect an additional USB 2.0 high-speed cable up to 16 feet long between the High Speed Hub and the USB 2.0 high speed port on the computer.

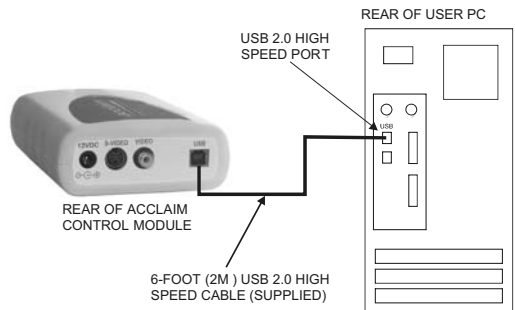
## USB Cable Connection Directly to PC

### NOTES:

On PC's that have both front and rear USB 2.0 high speed ports, it is recommended that the camera be connected to one of the rear mounted ports for best results.

Minimum PC processor and operating system requirements are listed in the Preinstallation Information of this manual.

A DirectX 9 user-supplied compliant streaming video capture software application must be installed on the PC to display live video. The supplied CD provides the required WDM drivers.



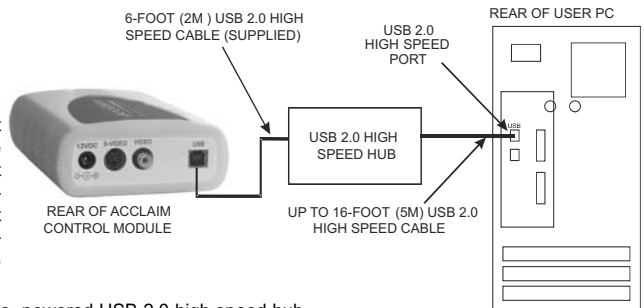
## USB Cable Connection via Hub

### NOTES:

A Hub may be used to connect the camera to the PC when the connection is longer than 6 feet or when the PC only has a single USB 2.0 high speed port and the camera must be connected along with other USB devices.

Use either a self-powered or bus-powered USB 2.0 high speed hub.

Follow installation instructions provided with the hub before connecting the camera.

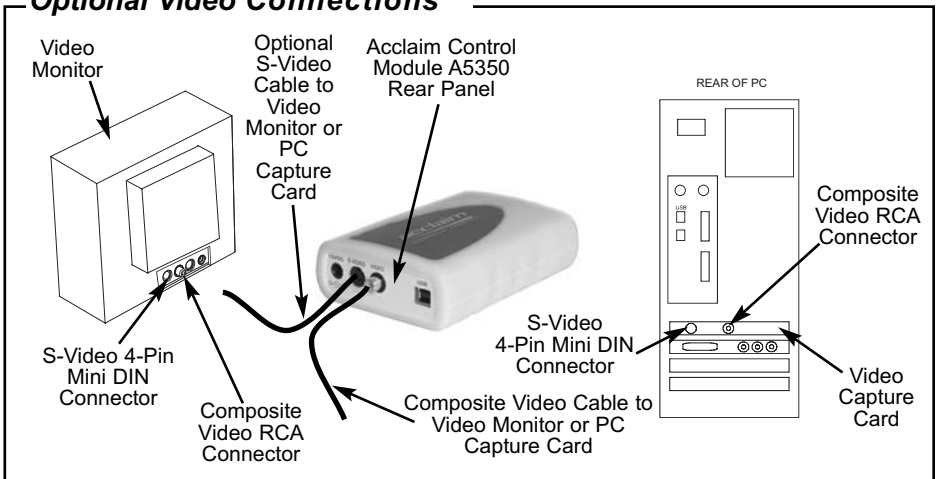


# INSTALLATION

**Video Connection Options** - Make connections as required by individual office equipment to connect the Acclaim System video outputs.

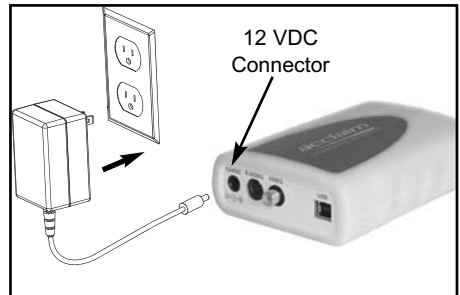
1. **S-Video.** Using an optional 6-foot S-Video, 4-Pin Mini DIN/4-pin Mini DIN cable (PN 77379), connect between the S-VIDEO connector located on the rear of the A5350 Control Module and the associated connector of a video monitor or a computer with a capture card as required.
2. **Composite Video.** Connect the supplied composite video cable between the VIDEO RCA connector located on the rear of the A5350 Control Module and the associated RCA connector of a video monitor or a computer with a capture card as required.

## Optional Video Connections



## Operating Power Connection -

The A5350 Control Module receives operating power from the supplied Power Supply Adapter (P/N A5135). Connect the dc power cord of the Power Supply Adapter to the 12 VDC connector located on the rear of the Control Module and then plug the Power Supply Adapter into an AC wall outlet.



**USB Driver Installation** – When the USB output of the Acclaim Control Module is used to send live digital streaming video and camera button control signals to the PC, three USB drivers must be installed to allow the user-supplied USB video capture software (such as VISIX) to process the signals from the Acclaim Control Module. The required Control Module drivers are:

- A driver for the built-in USB hub.
- A joystick driver for the built-in camera button controller.
- A WDM driver for the built-in video imaging device controller.

The hub and joystick drivers are provided by the Windows Operating System. The WDM video imaging device driver is provided on the CD supplied with the Acclaim Control Module. Install these drivers by performing the steps below.

1. Make sure that the USB 2.0 high speed cable and power supply adapter are connected as per the procedures above.
2. Place the power switch on the Control Module to the ON position. Verify that the green power indicator LED on the control module lights.
3. Observe that Windows displays the **Found New Hardware Wizard Screen** and then automatically installs the required hub and joystick button controller drivers.
4. To install the required WDM video imaging device driver, insert the CD supplied with the Control Module into the CD-ROM drive on the PC and then follow the steps below that apply to the Windows operating system being used.

## **Installing Driver Files Under Windows 2000:**

1. On the first wizard screen, click **NEXT** to continue.
2. On the second wizard screen, select the **SEARCH FOR A SUITABLE DRIVER FOR MY DEVICE** option and then click **NEXT** to continue.
3. Select the **CD-ROM DRIVES** option and then click **NEXT** to continue.
4. Windows should now display a screen indicating that the wizard has found a driver for the Acclaim System in the DEVICE DRIVERS folder on the CD. If so, click **NEXT** to continue.

If not, click **BACK** to return to the previous screen, select the **SPECIFY A LOCATION** option in place of the **CD-ROM DRIVES** option, click **NEXT** and then use the **BROWSE** button to manually locate the “Acclaim USB Camera.INF” file in the DEVICE DRIVERS folder on the CD. Click **NEXT** to continue.

5. On the this wizard screen, Windows may indicate that a digital signature was not found. Click **YES** to continue.
6. On the final wizard screen, click **FINISH** to complete the driver installation.

## **Installing Driver Files Under Windows XP:**

1. Select the **INSTALL THE SOFTWARE AUTOMATICALLY** option and then click **NEXT** to continue.
2. Windows may now display a screen indicating that the software for the Acclaim USB Camera has not passed Windows logo testing. Click **CONTINUE ANYWAY** to continue.
3. On the next wizard screen, click **FINISH** to complete the driver installation.

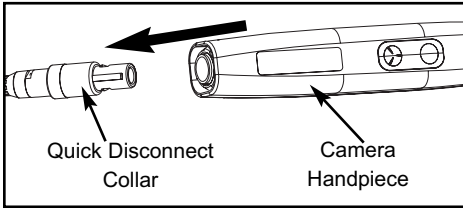
# CAMERA PORTABILITY



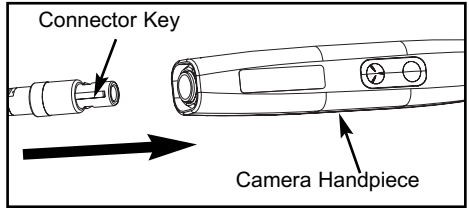
Do not twist or turn the Handpiece Cable connector. The connector is keyed and mates straight on with Camera Handpiece connector.

The Acclaim Camera Handpiece quickly detaches from the Handpiece Cable and is easily carried among patient operatories for use with additional Acclaim Camera System Control Modules. Refer to the corresponding illustrations and transport the Camera Handpiece as follows:

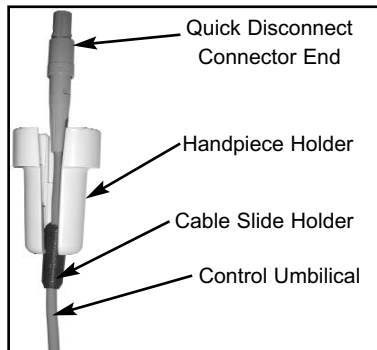
1. Retract collar of quick disconnect Handpiece Cable connector and simultaneously pull straight from the Handpiece connector.
2. Release connector quick disconnect collar.
3. Store the Handpiece Cable by placing cable slide holder into the Handpiece Holder.
4. Transport Handpiece to next operatory.
5. Connect Handpiece at new location by aligning the connector key with the keyway of the mating Handpiece Cable connector.
6. Insert straight into Handpiece connector until it securely snaps into place.



*Detaching Camera Handpiece*



*Connecting Camera Handpiece*



*Stored Camera Handpiece Cable*

# INFECTION CONTROL SHEATH

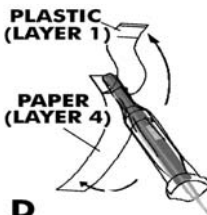
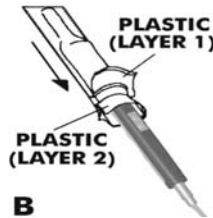
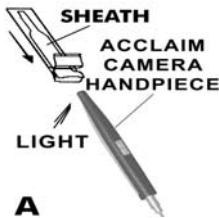


The infection control sheath must be used for only one patient and disposed of properly in accordance with local code.

**NOTE:** For optimum image clarity, the optically clear section of the sheath must be aligned with the camera lens by facing the camera/light source section of the handpiece down toward the paper layer.

**Disposable Sheath Installation** - Install a new infection control sheath on the Camera Handpiece for each patient as follows:

1. Remove the Camera Handpiece from the holder.
2. Insert the Camera Handpiece tip between the second and third layers (between the outer paper and plastic layers) with the camera/light source facing towards the paper layer. See A.
3. Push the Camera Handpiece completely in until the tip is fully inserted into the narrow tip of the sheath. See B.
4. Gently squeeze the illuminated tip of the Camera Handpiece between the thumb and index finger to ensure that the optically clear area of the sheath is flat against the lens tip. See C.
5. Peel away and discard the top plastic layer and the bottom paper layer. See D.



# ACTIVATION

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**NOTE:** When all camera system components are plugged into a single AC power strip, make sure that power strip is turned on. When camera system components are plugged into separate AC power outlets, make sure that each individual power outlet is turned on.

**Power Turn On-**Perform the following procedure as necessary to turn the power on for operation of the Acclaim System.

1. Review the Installation Section as needed and make sure the Acclaim System components are setup and connected for the applicable operating configuration.
2. If connecting to a computer system, turn on the computer and run the applicable video capture software. Make sure that the video capture software is set to display an NTSC (M) image with a 640 x 480 pixel resolution. If the video capture software supports a 2-button, joystick type footswitch, make sure that this software is set to enable and configure the buttons as needed.
3. If connecting to an analog video monitor, turn on the video monitor's power switch.
4. Turn on the Power switch on the control module front panel and verify that the power indicator LED illuminates green.
5. Remove the Camera Handpiece from the Handpiece Holder and verify that the camera's white LEDs illuminate.
6. If connecting to a computer system, verify that live video from the camera is correctly displayed on the computer monitor and also verify that the camera buttons perform the operations that apply to the video capture software that is being used. If not, follow the General USB Driver Check procedure provided below.
7. If connecting to an analog video monitor, verify that live video from the camera is correctly displayed on the video monitor.
8. Place the camera back into the handpiece holder and verify that the camera's white LEDs turn off.

## SYSTEM OPERATION

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**Computer-Connected System Operation -** The Acclaim System is normally operated connected directly to a computer system running various PC USB streaming video capture software applications. In this configuration the camera provides the image/video source while the computer and associated software are used to display and save the resultant images. Perform the following procedures to operate the Acclaim System when connected to a computer.



Make sure that the Acclaim System and associated computer power is turned on.  
Verify that the video capture software is running and correctly configured.

1. Activate the Acclaim System by performing the Power Turn-On procedures provided above.

2. Remove the Camera Handpiece from the handpiece holder and observe that the computer display shows the high-resolution live video images taken by the camera.
3. Place the camera lens window over area of interest and view image on display.
4. Press the appropriate keypad button on the Camera Handpiece to freeze (ie. capture) the displayed image on the computer monitor screen. The keypad button used depends on the video capture software installed.
5. Press the appropriate keypad button on the Camera Handpiece to save the captured image to the computer hard drive and then to return to a live image display. The keypad button used depends on the video capture software installed.
6. Repeat steps 3 through 5 as necessary.
7. When imaging an X-ray film on a light box, deactivate the LED light source by depressing both Camera Handpiece buttons simultaneously for approximately 3 seconds. Perform steps 3 through 5 to freeze and save the X-ray film image as desired.
8. Return the Camera Handpiece to the holder when done. Verify that the LED light source and camera turns OFF.
9. Set the STANDBY/ON switch on the Control Module front panel to the STANDBY position and verify that the front panel LED indicator lamp extinguishes.

**Monitor-Connected System Operation** - The Acclaim System can be operated directly connected to a video monitor. In this configuration the connected monitor displays high-resolution live video images taken by the camera. There is no computer system or software used to freeze and save the resultant images. Perform the following procedures to operate the Acclaim System when connected to a video monitor.

1. Activate the Acclaim System by performing the Power Turn-On procedures provided on page 20.
2. Remove the Camera Handpiece from the Handpiece Holder and observe that the video monitor display shows the high-resolution live video images taken by the camera.
3. Place the camera lens window over area of interest and view image on display.
4. When imaging an X-ray film on a light box, deactivate the LED light source by depressing both Camera Handpiece buttons simultaneously for approximately 3 seconds.
5. Return the Camera Handpiece to the holder when done. Verify that the LED light source and camera turns OFF.
6. Set the STANDBY/ON switch on the Control Module front panel to the STANDBY position and verify that the front panel LED indicator lamp extinguishes.

# DIAGNOSTIC PROCEDURES

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**General USB Driver Check** – When live video from the camera is not displayed on the computer monitor and/or when the camera buttons do not perform the operations that apply to the video capture software being used, then perform the following steps to verify that the camera system USB drivers have been correctly installed on the computer.

1. Go to the Windows Control Panel and double click on the System icon. Click the Device Manager button on the Hardware tab.
2. Verify that a Universal Serial Bus Controllers group is shown on the Device Manager screen and that a Generic USB Hub is listed under this group. If so, the driver for the control module's built-in USB hub has been installed. If not, check that the control module's power switch is turned on and that a USB2.0 high speed cable is connected from the control module USB output to the PC USB port. Try a different USB port on the PC. If necessary, replace the USB cable and/or the control module.
3. Verify that an Imaging Devices group is shown on the Device Manager screen and that an Acclaim USB Camera is listed under this group. If so, the WDM driver for the control module's built-in video imaging device controller has been installed. If live video from the camera is not displayed by the video capture software, follow the USB Video Diagnostic procedure described below to troubleshoot the problem further.
4. Verify that a Human Interface Devices groups is shown on the Device Manager screen and that a HID-Compliant Game Controller and a USB Human Interface Device is listed under this group. If so, the driver for the control module's built-in camera button controller has been installed. If the camera buttons do not operate correctly, follow the USB Button Diagnostic procedure described below to troubleshoot the problem further.

**USB Video Diagnostic** - When live video is not displayed on the PC monitor of the Acclaim System when the streaming video capture software application is running, there could be a problem with the settings in the software application or with the camera system. Use the following USB Video Diagnostic procedure to check that the camera and control module are working correctly.

1. Make sure that the associated Control Module is correctly connected to its power supply, to the Camera Handpiece and to the PC USB port and then turn on the power.
2. Insert the supplied USB driver CD disk into the CD-ROM drive.
3. Display the contents of this CD by double clicking the **MY COMPUTER** icon on the Windows desktop. Right click the icon for your CD-ROM drive and select **OPEN**.
4. Open the Utilities folder on the CD and then double click the **AMCAP.EXE** icon to start the software application.
5. On the AMCAP screen, click **DEVICES** on the menu bar along the top of the screen and make sure that **ACCLAIM USB CAMERA** is selected from the drop down list.
6. Click **OPTIONS** on the menu bar along the top of the AMCAP screen and make sure that **PREVIEW** is selected from the drop down list.

# DIAGNOSTIC PROCEDURES

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7. Depending on the outcome of the USB Video Diagnostic, perform one of the following:
  - a. If a live image is correctly displayed, exit from AMCAP application and make sure that the streaming video capture software application is configured correctly.
  - b. If a live image is not displayed, exit from AMCAP application and check the camera, control module, USB cable and USB driver file installation.
  - c. If a live image is displayed but the image colors are not correct, reset the driver's video settings by performing the procedures of step 8.
8. Reset the driver's video settings by performing the following:
  - a. On the AMCAP screen, click **OPTIONS** on the menu bar along the top of the screen and select **VIDEO CAPTURE FILTER** from the drop down list.
  - b. On the Properties screen select the **VIDEO PROC AMP** tab and then click the **DEFAULT** button. The image colors should now be correct. Click **OK** to close the Properties screen and exit from AMCAP application.

**USB Button Diagnostic** - If the buttons on the Camera Handpiece do not operate correctly when the streaming video capture software application is running, there could be a problem with the settings in the software application or with the camera system. Use the following USB Button Diagnostic procedure to check that the Camera Handpiece and the Control Module are working correctly .

1. Make sure that the associated Control Module is connected to it's power supply, to the Camera Handpiece and to the PC USB port and then turn on the power.
2. Go to the *Windows Control Panel*, double click the **GAMING OPTIONS** icon. On the Gaming Options screen select the **CONTROLLERS** tab.
3. Observe that the **CAMERA BUTTON CONTROLLER** appears in the list of installed controller/drivers with it's status listed as OK. If the status listed is not OK, check the Control Module.
4. Check the operation of the Camera Handpiece buttons by clicking the **PROPERTIES** button from the Gaming Options screen. Select the **TEST** tab from the Properties screen and verify the following:
  - a. Momentarily **press** the Top button on the Camera Handpiece and observe that the red Button1 indicator on the screen illuminates briefly when the button is released.
  - b. Momentarily **press** the Bottom button on the Camera Handpiece and observe that the red Button2 indicator on the screen illuminates briefly when the button is released.
  - c. If the expected results for both buttons is verified, then the problem is most likely with the streaming video capture software application. Make sure that the software application is correctly installed and configured.
  - d. If the expected results for both buttons is not verified, then the problem is most likely a hardware/ connection problem. Make sure that the Camera Handpiece and Control Module cables are correctly installed.

# MAINTENANCE

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## INSPECTION AND CLEANING

Perform the following inspection and cleaning procedures periodically as a preventive maintenance measure to keep the Acclaim System in optimal condition resulting in trouble-free operation producing crisp, clear images.



Do not attempt any internal service of Acclaim System components. Contact your local authorized Air Techniques dealer for service. Failure to heed this warning may result in equipment damage and voiding the warranty.

**Inspection** - Routinely inspect each component of the Acclaim System for possible defects as follows:

1. Camera Handpiece -
  - a. Check overall handpiece for chips, cracks or other irregularities.
  - b. Check the lens window for debris or spots.
  - c. Check the connector socket for damage.
2. Control Module -
  - a. Check for broken indicator lamp and switch.
  - b. Check all connector sockets for damage, loose or missing hardware.
3. Cables and Connectors -
  - a. Check cables for damaged or deteriorated insulation kinking or twisting.
  - b. Check connectors for loose, bent or missing pins.
  - c. Check that both quick-disconnect plug ends snap closed to snugly secure the Handpiece Cable to the Camera Handpiece and Control Module connectors.



Do not spray cleaning liquids or disinfectant directly on the camera handpiece or control module. Use care not to allow liquids to run into internal circuitry.

Do not wipe the surfaces using benzene, thinner, etc. as this may degrade the finish.

**CAUTION:** Always turn Off power and unplug the Acclaim System components before performing cleaning procedures.



The infection control sheath must be used for only one patient and disposed of properly in accordance with local code.

**Cleaning** - Clean each component of the Acclaim System as needed by performing the following procedures.

1. Control Module-Use a non-corrosive surface disinfectant such as Birex® se.
2. Camera Handpiece-Following every patient use, remove the infection control sheath from the Camera Handpiece and dispose in accordance with local regulations. The Camera Handpiece can be wiped clean and disinfected with any non-corrosive surface disinfectant such as Birex® se.
3. Camera Window Lens-Remove debris or spots from lens window by cleaning with alcohol and cotton swabs.

# SPECIFICATIONS

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External Adapter Voltage input:	100-240 Volts $\pm$ 10%
Frequency:	50/60 Hz
Voltage Output:	12 VDC (Optional adapter configurations available for international outlet usage.)
Power Consumption:	7.2 watts
Video Outputs:	S-Video, Composite Video, High Speed USB 2.0 Video
Sensor:	1/4 Inch CCD
Format:	NTSC
Pixels:	768 H X 494 V
Resolution:	470 TV lines (Analog Video) 640 x 480 pixels (Digital Video)
Signal to Noise Ratio:	> 50 dB
Exposure Control:	Automatic
Illumination:	Ultra-bright white LED lamps
Image:	Normal, not mirrored
Viewing Angle:	50 Degrees horizontal
Operating Temperature:	10° to 40° C
Storage Temperature:	0° to 70° C
Humidity:	10 to 90% non-condensing
Classifications:	Portable, Continuous Operation, Class 2, Type B
Protection for Ingress of Water:	Ordinary
Flammable Atmosphere:	Cannot use in the vicinity of flammable anesthetic mixtures of air, oxygen or nitrous oxide.

Refer to page 12 for the minimum PC requirements

## PHYSICAL CHARACTERISTICS

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<b>Dimensions</b>	<b><u>Length</u></b>	<b><u>Width</u></b>	<b><u>Height</u></b>	<b><u>Weight</u></b>
Handpiece A5520:	8.3 inches (211 mm)	1.0 inches (25 mm)	0.9 inches (23 mm)	2.1 oz. (59 grams)
Control Module: without Capture A5350:	5.7 inches (145 mm)	3.9 inches (99 mm)	1.6 inches (41 mm)	0.7 lbs. (318 grams)

# ACCESSORIES

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The following lists the ordering number and description for accessory components available to maintain and expand the Acclaim System to meet your professional needs.

Contact your Air Techniques Dealer for information.

## Acclaim Camera System

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Order Number	Description
A5300	Complete Acclaim Camera System consisting of the following:
A5520	Acclaim Camera Handpiece Assembly
A5350	Acclaim Control Module consisting of the following: Acclaim Control Module Assembly Wall-Mounted Power Supply Adapter, P/N A5135 15-foot Multi-Conductor Camera Handpiece Cable Assembly, P/N A5105 6-foot Composite Video Cable, RCA/RCA, P/N 77389 6-foot USB 2.0 High Speed Cable, Type A/Type B, P/N B3554 Camera Handpiece Holder with Double-Sided Adhesive Fastener, P/N A5145 Dual Lock Fastener Kit for Control Module Mounting, P/N A5155 Disposable Infection Control Sheaths for Camera Handpiece (Quantity 20)
A5151	CD containing - WDM video drivers for DirectX 9 compliant streaming video capture software applications. USB Video Diagnostic Software PDF version of Operator's Manual
A5301	Operator's Manual
74500	VISIX Imaging Software, 5 Licenses, see page 27.
Replacement	Disposable Infection Control Sheaths for Camera Handpiece
A5110	Box of 100
A5100	Box of 500
Optional	Multi-Conductor Camera Handpiece Cable Assemblies
A5105-6	6-Foot Length Cable Assembly
A5105-9	9-Foot Length Cable Assembly
A5105-30	30-Foot Length Cable Assembly
A5165	50-Foot Length Cable Assembly
77379	Optional 6-foot S-Video, 4-Pin Mini DIN/4-pin Mini DIN Cable

Consider VISIX, our new comprehensive digital imaging software application, providing seamless integration with our digital imaging suite; the Accent CCD Intraoral Sensor, ScanX PSP Systems and Acclaim Intraoral Cameras.

## **Key Features.**

- Easy to learn.
- Simple to use.
- Acquire, mount, view and store images with just a few mouse clicks.
- Customize images to personal preferences with our simple Set-Up 1-2-3 tool.
- Exposure - Our Stop Light Exposure System is a unique indicator to ensure optimum data capture. It helps you acquire great images by monitoring X-ray exposure.
- Viewing - VISIX provides automatic image mounting that is completely customizable.
- Flexibility - VISIX includes a built-in bridging solution to over 35 Practice Management Software titles.

VISIX is the superb software complement for Acclaim. Contact your authorized dealer for further information.

Air Techniques and ALLPRO Imaging are leading manufacturers of fine dental, medical and veterinary equipment from air and vacuum systems and X-ray film processors, to an impressive line of new products incorporating the most recent technological advances. These new products, vital components of the innovative professional practice, include intraoral cameras, digital imaging systems, which utilizes phosphor plate technology and, most recently, an intraoral digital X-ray system using sensor technology.

Air Techniques and ALLPRO Imaging have been manufacturing quality products for the dental, medical and veterinary professional since 1962.

Air Techniques and ALLPRO Imaging products are distributed only through authorized dealers. Refer to [www.airtechniques.com](http://www.airtechniques.com) or [www.allproimaging.com](http://www.allproimaging.com) to find a dealer in your area.

- Accent™ Intraoral Digital X-ray Image System
- Acclaim® USB Only Intraoral Digital Video Camera System
- Acclaim® Intraoral Digital Video Camera System
- AirStar®
- A/T 2000® XR
- Guardian™ Amalgam Collector
- Peri-Pro®
- Provecta 70™
- Rinsendo Root Canal Disinfection System
- ScanX®
- STS™
- VacStar™

- 100 Plus
- 2010
- Medscope
- Provecta V
- ScanX® 12
- ScanX® DVM
- ScanX® 12 DVM
- ScanX® NDT
- ScanX® 12 Portable
- ScanX® 14 Portable
- ScanX® NDT Portable
- ScanX® 14 In-Counter

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