

ACCENT™

INTRAORAL DIGITAL
X-RAY IMAGING SYSTEM

USB Interface Model

Part Numbers:
B5100 and B5200

Instruction Manual



**AIR
TECHNIQUES**
INC.

 ALLPRO IMAGING

ISO
9001
ISO 13485
FDA-GMP COMPLIANT

FOREWORD

Air Techniques and its AllPro Imaging division have prepared this document as a guide to the proper use of the ACCENT™ USB Intraoral Digital X-ray Imaging System. References in this manual to Air Techniques includes its division AllPro Imaging.

Refer to the following companion documents as necessary:

Accent Sensor Care Guide, P/N B5028

TABLE OF CONTENTS

Congratulations	3
Warranty	3
On-Line Warranty Registration	3
Safety Notice	4
Knowledge of Warnings and Cautions	4
Authorized Dealer Service Only	4
General Safety Information	4
Use Of Accessory Equipment	5
Electrical Safety Notes	5
Markings	5
Important Information	6
Purpose of this Manual	7
Box Contents	7
Key Parts	8
Unpacking and Inspection	8
Product information	9
Correct Usage	9
Incorrect Usage	9
Technical Data	10
Computer Requirements	12
Functional Description	13
Indicators and Connectors	14
TWAIN Interface	15
Installation	17
Operation	21
Operational Options	23
Care and Maintenance	24
Troubleshooting	26
Accessories	27

CONGRATULATIONS

Congratulations on your purchase of the ACCENT™ USB Intraoral Digital X-ray Imaging System, the latest imaging product from Air Techniques, a leading manufacturer of dental, medical and veterinary equipment since 1962. The ACCENT™ USB Intraoral Digital X-ray Imaging System (hereafter referred to as ACCENT) offers the benefits of a film-less radiographic system that produces high resolution, diagnostic quality images. Using proven Charge-Coupled Device (CCD) technology, the ACCENT produces high efficiency, low noise digital images, which are transmitted to your computer for immediate viewing.

This manual covers the installation, operation and maintenance of the ACCENT System. Review and follow the guidelines included in this manual to ensure that your ACCENT System gives the highest level of service. Also, contact your authorized dealer for product support and information on how to expand your ACCENT System.

WARRANTY

The ACCENT™ System is warranted to be free from defects in material and workmanship for a period of 2 years from the date of purchase. The manufacturer's limited warranty coverage is as follows:

ACCENT Control Module - Any Control Module returned through an authorized dealer, will be repaired or replaced at our option at no charge provided that our inspection indicates it to have been defective.

ACCENT Sensors - Sensor failures due to manufacturing defect or accidental damage during the warranty period will be repaired or exchanged with replacement sensor that, at the manufacturer's discretion, will be either "Re-manufactured Equipment" or new. Sensor failure due to obvious equipment misuse or improper care, can, at the manufacturer's discretion, modify the terms or duration of this manufacturer's warranty.

Replacement equipment continues under warranty for the remainder of the original 2-year warranty. The warranty does not apply to damage due to shipping, misuse, careless handling or repairs by non-authorized service personnel. Dealer labor, shipping, and handling charges are not covered by this warranty. Warranty void if installed or serviced by other than authorized service personnel. Air Techniques, Inc./ALLPRO Imaging 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

Quickly and easily register your new ACCENT on-line. Just have your product model and serial numbers available. Then go to the Air Techniques website, www.airtechniques.com, or the AllPro Imaging website, 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

This equipment has been designed to minimize exposure of personnel to hazards. While the ACCENT is designed for safe operation, certain precautions must be observed.

Use of the ACCENT 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.

In this manual, the following definitions apply for all WARNINGS and CAUTION Statements:

WARNINGS: Any operation, procedure or practice, which, if not strictly observed, may result in injury or long-term health hazards to personnel.

CAUTIONS: Any operation, procedure or practice, which, if not strictly observed, may result in destruction of equipment or loss of treatment effectiveness or damage to equipment..

Authorized Dealer Service Only.

The interior of the Control Module is only accessible by removing hardware with tools. It should be opened and serviced only by an authorized service technician.

Failure to heed this warning may result in equipment damage or personal injury, and **will void any and all warranties**. Contact your authorized dealer for service information.

General Safety Information.

- Retain all packing material for possible return of the product to the manufacturer. Take care that it does not fall into the hands of children. Only the original packing guarantees optimal safety of the device during transport. Should it be necessary to return the device to the manufacturer during the warranty period, Air Techniques will not accept claims for damage arising from using incorrect packing materials.
- Federal law restricts this device to sale by or on the order of a licensed practitioner.
- Before every use the operator must check the functional safety and the condition of the appliance.
- The operator must be knowledgeable in the operation of the appliance.
- This device is not to be used in any areas where the atmosphere could cause fire or explosion.

SAFETY NOTICE

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 601-1 and/or IEC 601-1-1 harmonized national standard.

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

Electrical Safety Notes.

- To avoid risk of electric shock, fire, short-circuit or dangerous emissions, never insert any metallic object into the equipment.
- Only use connection cable(s) delivered with the device.
- Check the device cables for possible damage before switching on. Damaged cables, plugs and sockets must be replaced before use.
- Never touch open supply outlets and patients simultaneously.
- Do not locate control module where it could be sprayed with water, or in a damp environment.

Markings.

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



Alerts users to important information and/or mandatory regulations or prohibitions for the prevention of personal injury or substantial property damage. Read carefully to avoid any problems.



Indicates static sensitive device. User must handle properly to avoid damage from electrostatic discharge (ESD).



Item used only once.
Discard after use.

ATTENTION USERS:

Manufacturing date code on serial number label is in the format: MONTH YYYY.

IMPORTANT INFORMATION

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 Air Techniques for the intended purpose. Air Techniques 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 Air Techniques.
- There is no guarantee against damage arising where parts or accessories are used that are not supplied by Air Techniques.
- Observe the usage and storage conditions.
- Appliances which accumulate condensation or become wet through a change of temperature may only be operated after they are fully dry again.
- Air Techniques regard themselves as being responsible for the equipment with regard to safety, reliability and proper functioning only if assembly, resetting, changes or modifications, extensions and repairs have been carried out by Air Techniques or a dealer authorized by Air Techniques 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 Air Techniques.

PURPOSE OF THIS MANUAL

This manual covers the installation, operation and maintenance of the following *ACCENT* systems and components:

- Size 1 Sensor with USB Control Module and USB CablePart Number B5100
- Size 2 Sensor with USB Control Module and USB CablePart Number B5200
- USB Control Module and USB CablePart Number B5050
- Size 1 SensorPart Number B5120
- Size 2 SensorPart Number B5220

BOX CONTENTS

Each component of the *ACCENT* is shipped packaged in individual protective containers all packed in a single box, which includes:

Items Common to Both USB <i>ACCENT</i> Systems P/Ns B5100, B5200 and Control Module P/N B5050	Quantity	Part No.
USB Control Module	1	B5050
High Speed USB 2.0 Connection Cable	1	B5027
Sensor Storage Holder	1	B5030
CD containing drivers for USB	1	B5060
Accent Instruction Manual	1	B5046
TWAIN Interface User's Guide	1	B5077
 Items Included with Size 1 Sensor, P/N B5120 and USB <i>ACCENT</i> System, P/N B5100		
Size 1 Sensor	1	B5120
Accent Sensor Care Guide	1	B5028
Disposable Infection Control Sheaths for Size 1 Sensor (pack of 25)	1	B5125
 Items Included with Size 2 Sensor, P/N B5220 and USB <i>ACCENT</i> System, P/NB5200		
Size 2 Sensor	1	B5220
Accent Sensor Care Guide	1	B5028
Disposable Infection Control Sheaths for Size 2 Sensor (pack of 25)	1	B5225

KEY PARTS

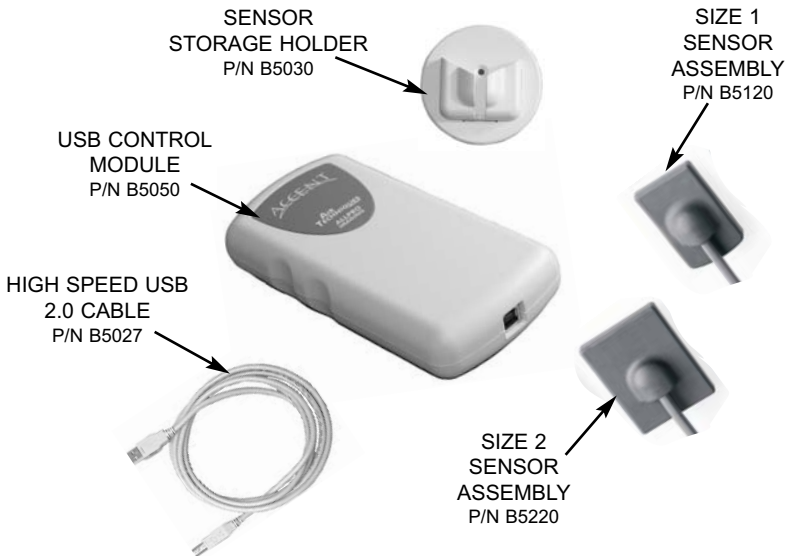


Figure 1. USB ACCENT System Key Parts Identification

UNPACKING AND INSPECTION

Unpack each component of the *ACCENT* and inspect for physical damage such as scratched panels, damaged connectors, etc. If any damage is noted, notify your 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 authorized dealer.

PRODUCT INFORMATION

Correct Usage

- Operation of the *ACCENT* may only be carried out by suitably qualified personnel.
- The *ACCENT* is only to be used in the production of intraoral X-ray exposures.
- The *ACCENT* should be used in a room equipped for it.
- Room temperature should be in the range 50 to 105°F (10 to 40°C) with relative humidity between 20 and 60%.
- If the device is brought into the room of operation from a cooler environment, condensation can build up. Do not connect the device until it has warmed up to room temperature and is absolutely dry.
- This room should be free of all possible interferences (e.g. strong magnetic fields), as these could affect the operation.
- The *ACCENT* may only be operated together with authorized software.
- Correct usage includes observing all installation and operating instructions and adherence to the set-up, operation and maintenance instructions.
- Any use, above and beyond that described in this manual as correct usage, will invalidate the warranty.
- The operator is liable for all damages caused as a result of incorrect usage of this appliance.
- Only *ACCENT* Sensors made by Air Techniques may be used with the *ACCENT* Control Module.

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 in this case.
- Additionally, the manufacturer is not liable for any damage to the *ACCENT* Sensor caused by patient biting, dropping or incorrect handling. See warranty on page 3 for the *ACCENT* Sensor.

TECHNICAL DATA

Power Supply

The USB ACCENT Control Module is a USB powered device using less than 450 mA. No external power supply is required.

Operating Conditions

Temperature 50 to 105°F (10 to 40°C)
Humidity 20 to 60 % non- condensing

Transport and Storage Conditions

Temperature -40 to 158°F (-40 to 70° C)
Humidity 10 to 95 % non- condensing

USB ACCENT Control Module

Digital Signal Processing 32 bits
Image Acquisition 4096 gray scales
PC Connection:
 USB Cable Length 15 feet (4.6 m)
 PC Connector USB port
 Transmission Less than 8 seconds
Weight: 5.8 ounces. (163 g)
Dimensions: Length Width Height
 6.4 inches 3.25 inches 1.25 inches
 (163 mm) (83 mm) (32 mm)

ACCENT Sensor Size 1

Number of pixels 1.25 million
Pixel Size 22 x 22 μ m
Technology CCD + Scintillator
Weight 3 ounces. (88 g)
Dimensions Length Width Height
 External 1.6 inches 1 inch 0.25 inches
 (39.5 mm) (25 mm) (5.7 mm)
 Active Surface 20 x 30 mm, i.e. 600 mm²
Attached Cable length 4 feet (1.25 meters)

TECHNICAL DATA

ACCENT Sensor Size 2

Number of pixels	2.05 million		
Pixel Size	22 x 22 μm		
Technology	CCD + Scintillator		
Weight	3.4 ounces. (95 g)		
Dimensions	<u>Length</u>	<u>Width</u>	<u>Height</u>
External	1.67 inches (42.5 mm)	1.26 inches (32.5 mm)	0.25 inches (5.7 mm)
Active Surface	27.5 x 36.08 mm, i.e. 990 mm ²		
Attached Cable length	4 feet (1.25 meters)		

IEC601-1 Classification:

Class 1

Type BF Applied Part

Transportable

Continuous Operation

Equipment not suitable for use in the presence of flammable anaesthetic mixture(s).

Protection against ingress of liquids -Ordinary

Electromagnetic Interference:

Electromagnetic interference between the equipment and other devices can occur. Do not use the equipment in close conjunction with sensitive device or devices creating high electromagnetic disturbances.

Portable and Mobile RF communications equipment and devices can affect MEDICAL ELECTRICAL EQUIPMENT operation.

COMPUTER REQUIREMENTS

Important: To operate the *ACCENT* Sensor, it must be connected to a compliant Computer System, and the computer must be loaded with authorized Image Management Software. Air Techniques provides neither the PC nor the Software. The PC and Software are provided by the dealer or user.

The Computer System (laptop or computer, monitor, etc.) and any related peripheral or equipment, supplied by the user, or a third party, must comply with the requirements for accessory Equipment as specified in the appropriate IEC 601-1 and/or IEC 601-1-1 harmonized national standard.

The minimum computer system requirements necessary to operate the *ACCENT* Sensor are listed below. Items listed with an asterisk (*) are required.

Operating System:	* Windows 2000 Professional for an Intel 32-bit processor with Service Pack 4 or later, or 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 1.1 or 2.0 or later
CPU:	2.8 GHz Pentium IV
RAM:	1 GB
Hard Drive:	120 GB
Monitor:	SVGA 17 inch, 1024 x768 or higher resolution,contrast ratio 450:1,
1024 x 768 Resolution:	.22 dot pitch capability. For optimum viewing a CRT is recommended.
Video Display Adapter:	32 MB RAM
Peripherals:	* CD ROM Drive Standard Keyboard and Mouse Backup Device External Surge Protector Power supply backup
Image Management Software:	* Compatible authorized third-party software is required. (not included with product)

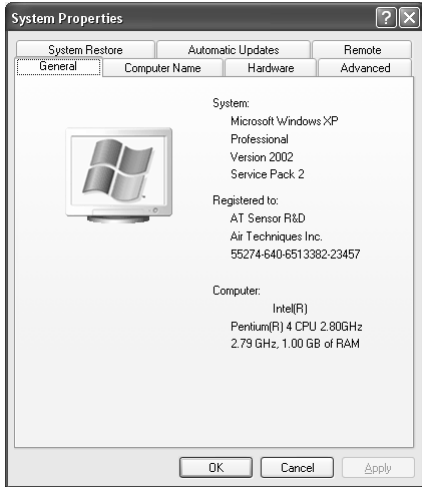
COMPUTER REQUIREMENTS

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**.



FUNCTIONAL DESCRIPTION

The **ACCENT** system is comprised of an **ACCENT** Sensor (size 1 or size 2) with attached connection cable, **USB Control Module** and **USB Transmission Cable**. The **ACCENT** Sensor is connected to the **Control Module** via a 4-foot (1.25 meter) cable. The **USB Control Module** connects to the user-supplied computer system via the 15-foot (4.6 m) **USB** cable.

During operation of the **ACCENT** system, the X-ray beam is converted into an electronic signal by the **ACCENT** Sensor. The resulting image information is digitized using a 12-bit A/D converter and then stored in the **Control Module**.

The image memory of the **Control Module** reduces the possibility of image loss caused by interference or misuse. The image is transferred block by block to the user-supplied computer system and processed by the image software.

Only one image can be processed during a data transmission cycle, which is indicated by an illuminated front-panel blue LED indicator. New images can be created when the blue indicator extinguishes and the front-panel yellow LED indicator starts blinking.

The **ACCENT** can only be used when connected to a user-supplied computer system loaded with an **Image Management Software** authorized by **Air Techniques**.

Each time the **ACCENT** Sensor is used it must be covered using an appropriate disposable infection control sheath (PN B5125 or B5225).

INDICATORS AND CONNECTORS

Front Panel. The specific functions of the LED indicators and connector (see Figure 2) located on the front panel of the Control Module are described below.

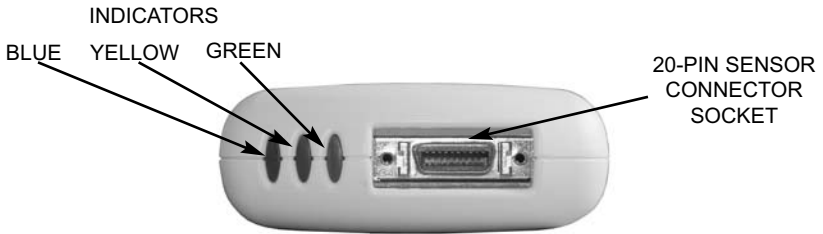


Figure 2. USB ACCENT Control Module Front View

Green LED indicator	Illuminates green to indicate that the connection between the Control Module and computer is operational.
Yellow LED indicator	Blinks yellow to indicate that system is ready for image acquisition.
Blue LED indicator	Illuminates steady blue to indicate that the ACCENT system has an image. Blinks blue to indicate that the ACCENT system is transferring the image to the computer.
Sensor Connector Socket	Accepts connection of either Size 1 or 2 ACCENT Sensor.

Rear Panel. The function of the connector located on the rear panel of the Control Module, shown by Figure 3, is described below.

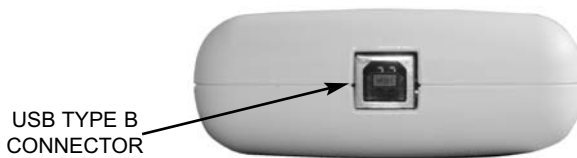


Figure 3. USB ACCENT Control Module Rear View

USB Type B Connector	Accepts connection of the High Speed USB cable for connection to compatible computer.
----------------------	---

About the TWAIN Consortium:

The TWAIN Working Group is a not-for-profit organization, which represents the imaging industry. TWAIN's purpose is to provide and foster a universal public standard, which links applications and image acquisition devices. The ongoing mission of this organization is to continue to enhance the standard to accommodate future technologies.

The TWAIN consortium does not market any software, hardware or other products. It has a website at <http://www.twain.org/> on which you can find a wealth of practical information for people that want further information on the subject.

The TWAIN standard exists for Windows and Macintosh platforms. Only Windows is covered herein. At the present time, there is no Macintosh version of the TWAIN interface for *ACCENT* sensors.

On paper, the TWAIN standard allows total interconnection of software and peripherals. However, software and peripherals are not obliged to comply with the entire standard. So there can be partial or complete incompatibilities in some cases.

TWAIN Interface for *ACCENT*

This section provides instruction for connecting the *ACCENT* using the TWAIN interface. It contains procedures to acquire images using the *ACCENT* system with widely used, commercially available image program applications via the TWAIN interface. Refer to the documentation supplied for the individual imaging program application for detailed operating procedures and specific setup instructions to acquire or manipulate images.

If your imaging application does not display the *Accent* TWAIN user interface, use the TWAIN Test application included with the *ACCENT* software and driver installation. The TWAIN Test application displays the *Accent* TWAIN user interface providing controls to the break existing wireless link or establish a new one. The *Accent* TWAIN user interface 'remembers' the last link that was used, so when you return to your imaging application, acquisition will use the new settings.

Installation of the TWAIN interface for the *ACCENT*

The TWAIN interface is installed, by default, as part of the *ACCENT* software and driver installation.

TWAIN Graphical User Interface

As shown in Figure 4, the TWAIN Graphical User interface is simple and intuitive. It is divided into six separate functional areas described on the next page.

TWAIN INTERFACE

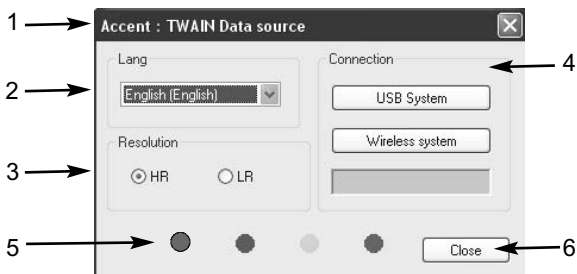


Figure 4. TWAIN Graphical User Interface

1. Title Bar: Contains the words "Accent: TWAIN Data Source". If it displays any other words, then you are using a language other than English or you have not selected the Accent as your TWAIN data source.
2. Language Selection Box: By default, the interface uses the same language as Windows or English.
3. Resolution Box: Allows selection of high resolution (HR) or low resolution (LR). By default, the Accent system acquires images in low resolution. Refer to the Image Resolution section on page 23.
4. Connection Box: By default, the TWAIN interface searches for an Accent USB Control Module connection. the progress bar represents the power state. The batteries need charging when this turns red.
5. LED Indicators: The blue, red, yellow, and green LEDs indicate the status of your Accent system. The red LED indicates an error if it remains illuminated for more than 5 seconds, or indicates a search reset when it flashes briefly. The green LED illuminates when a link to an Accent system has been established. The yellow LED blinks when the software is ready to acquire a new image. When X-rays have been detected, the blue LED illuminates while the data are being transmitted.
6. Close Button: Lets you close the Accent TWAIN user interface when you have finished taking X-rays. Some imaging applications close the TWAIN user interfaces after capturing each image; others wait for the user to close the window.

INSTALLATION



Protect the imaging system from direct sunlight and excessive heat. Ensure that the Control Module connector is accessible at all times for connection of the *ACCENT* sensor plug as necessary.

Important:

Do not use bumpers when using the optional Control Module Holster. The Control Module with bumpers does not fit into the holster. Bumpers are permanently adhered to the Control Module surface and can not be easily removed once applied.

Installing the *ACCENT* system is as simple as deciding where to place the Control Module and making the necessary connections to the computer system loaded with a compatible Image Management Software application.

Control Module Location -

Although the Control Module can be put on a table top or any flat stable surface, it is recommended that it be placed in the optional Control Module Holster (P/N B5040) secured to the X-ray arm using the supplied belt.



Sensor Storage Hanger Location -

Adhere the self-sticking Sensor Storage Hanger to the X-ray arm near the Control Module.



Optional Bumpers -

Self-sticking bumpers are supplied to act as feet for the Control Module when not using the optional Control Module Holster (P/N B5040).



Static electricity is a natural phenomenon and consequently electrostatic discharge can damage electronic devices, particularly computers and associated peripherals.

Static Prevention - Static electricity is a potential source of problems with electronic devices, particularly computers and their peripherals.

Your *ACCENT* system is no exception. As such, basic precautions should be taken to prevent static build-up, especially if you are using the system in a carpeted room and/or areas of low humidity.

The following suggestions will help eliminate static build-up and protect your computers, *ACCENT* equipment, and other electronic devices:

- Ensure your electrical outlets are properly grounded
- Floor treatments (i.e. Staticide 2005/2002)
- Anti-static floor mats
- Air Humidifier
- Air Ionizer

INSTALLATION

ACCENT USB System Interconnection. Refer to Figure 5 and perform the following procedures to connect the ACCENT system.

1. Connect the ACCENT Sensor by aligning the connector pins and inserting the sensor cable plug into the sensor socket of the Control Module until it securely snaps into place.
2. Connect the supplied USB cable between the USB connector located on the rear of the Control Module and any available USB port on the computer. Always make sure to **use the same USB port** whenever reconnection of the USB cable is necessary.
3. Observe that the green LED illuminates green to indicate that the USB connection between the Control Module and computer is operational.

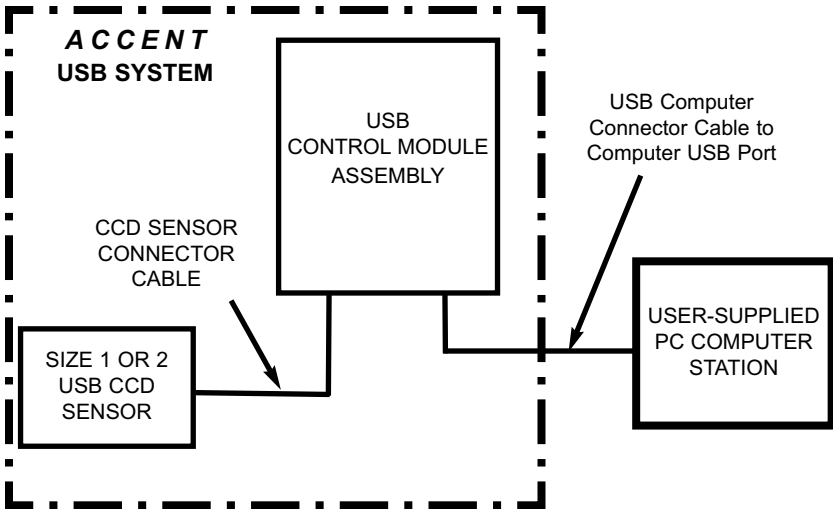


Figure 5. ACCENT USB System Interconnection

INSTALLATION

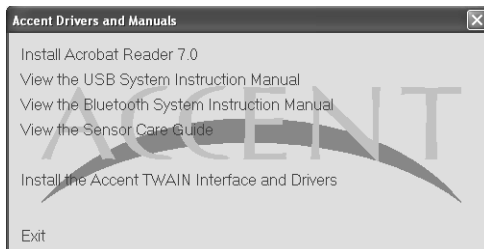
Note: Disconnect USB cable Control Module before removing the *ACCENT* Sensor. Remove the *ACCENT* Sensor by squeezing pulling the sensor cable plug from the sensor socket of the Control Module. The USB *ACCENT* Control Module is a USB powered device using less than 450 mA. No external power supply is required. Make sure that the **required** Windows operating system is installed. See page12 for details.

Important: Do not run the TWAIN Test program while acquiring images with another program. Acquiring from two applications causes the Control Module to lock-up resulting in loss of image data. If the Control Module locks up, reset by unplugging the USB cable and then plugging back in.

Initial Setup

This procedure installs Accent TWAIN Interface into Windows. It must be performed once on each computer that will use the Accent Control Module. Perform the procedures as follows:

1. Install the Accent TWAIN Interface and Drivers from the Accent drivers disk. Insert the Accent Driver disc, the installation program automatically runs and opens the **Accent Drivers and Manuals** window shown below.



2. Select **Install the Accent TWAIN Interface and Drivers** from the **Accent Drivers and Manuals** window and observe that the **Accent – InstallShield Wizard** installer window opens.

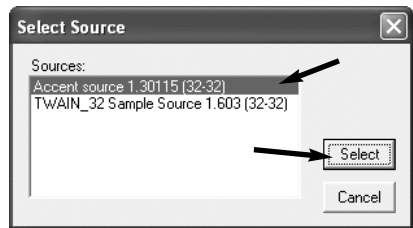
Note: A Microsoft® Certification statement may appear. If it does, click **Continue Anyway** to proceed with installation.

3. Select **Next** for all options within the **Accent – InstallShield Wizard** installer to load all the software and drivers. Click **Finish** when done.

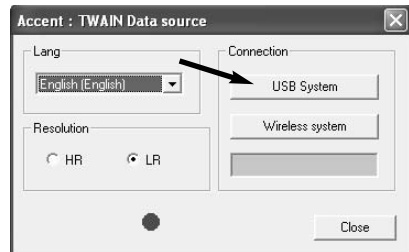
INSTALLATION

4. Start the user-supplied imaging program application in accordance with the individual imaging program application documentation or, if necessary, start the TWAIN Test program by pressing the **Start** button and selecting **Programs→Accent X-ray Sensor** and then selecting the **TWAIN Test** option.
5. Select the TWAIN data source, typically by clicking on the **Select source** file menu option. Observe that the **Select Source** window opens as shown below.

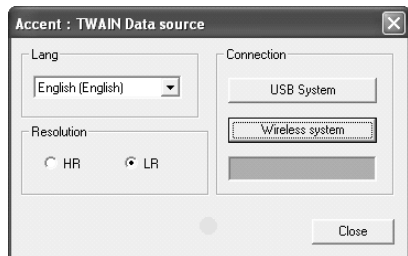
6. Make sure that the **Accent source x.yyyy** is selected, where x and yyyy are numbers representing the version of the Accent TWAIN interface software. Press the **Select** button to finish the selection and close the window.



7. Open the TWAIN data source to acquire an image. If using the TWAIN Test program, click on the **Acquire...** file menu option. Observe that the **Accent: TWAIN Data source** window opens.



8. When setup is complete, the yellow light illuminates and the sensor should be armed and ready for use.



Acquisition Procedure

When the TWAIN interface for the ACCENT sensor is open, the yellow LED should flash. If it does not, you must verify that your ACCENT system is powered on, has a sensor plugged in and no other software is trying to communicate with the ACCENT system.

If the yellow LED still does not blink after checking all conditions, then refer to the Troubleshooting section for help on resolving the problem.

When changing the image resolution, the ACCENT system is disabled and then re-enabled immediately afterwards.



The X-ray imaging system may only be operated by suitably qualified personnel.

Imaging Procedure

Operate the ACCENT to capture a digital X-ray by performing the following procedures. These procedures should be conducted as written. Omitting **any step** can cause retaking of the image being necessary.

1. Start the PC and the installed user-supplied software.
2. Before imaging can start, the green LED must be illuminated otherwise the images cannot be acquired. Observe that the green LED is illuminated.
3. Set Image Management Software application to acquire images.



Make sure to cover the ACCENT Sensor with a new disposable infection control sheath for each patient for hygienic and health reasons.



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

4. Place a new disposable infection control sheath over the ACCENT Sensor and place this in the mouth of the patient.

OPERATION

5. Observe that the yellow LED blinks to indicate the system is ready to take a new image.
6. When the X-ray machine is activated, the Control Module automatically detects the exposure signal and stores the image in internal memory. At this point, the yellow LED extinguishes and the blue LED illuminates.

The Control Module can no longer acquire additional images until the image is transferred to the user-supplied image software application installed on the computer system.

7. The Control Module is ready to take the next image when the yellow LED resumes flashing.
8. Repeat steps 5 through 7 as necessary to complete the X-ray session.

OPERATIONAL OPTIONS

Image Resolution

The ACCENT system allows image acquisition in one of two resolutions, High resolution and Low resolution. Each has distinct advantages and disadvantages that will have to be taken into account when making choice for your particular application.

High Resolution. High resolution produces images that are of better quality but require

- higher X-ray dose
- a longer transfer time
- requires more computer disk space.

The High resolution option should only be chosen for images requiring a very high precision and, above all, for patients with whom there is no risk.

Low Resolution. Low resolution produces images that are slightly less precise than high resolution (the difference is hardly noticeable to the naked eye on-screen).

- requires a lower dose
- can use Low resolution in most cases
 - especially for children,
 - pregnant women
 - and high-risk patients.

CARE AND MAINTENANCE

Sensor Care

To prevent damage to the *ACCENT* sensors, please read and act on the following suggestions

- DO** wipe down the sensor with a sterile solution
- DO** store the sensor in its proper location when it is not in use
- DO** keep the sensor and the remote off of the floor at all times
- DO** use proper bite holders, tabs and sterile sheaths every time the sensor is used.
- DON'T** **autoclave** the sensor
- DON'T** **soak** the sensor or its connector in disinfecting solution
- DON'T** **clamp** the sensor or its cable with a hemostat or equivalent
- DON'T** **pull** the sensor by its cable during sheath removal
- DON'T** **hang** the sensor by its cable
- DON'T** allow anyone to **bite** on the sensor

Cable Care

Improper storage, handling or uncoiling of a sensor cable is the most common cause of sensor failure. It is important that the following instructions are read and acted on to prevent cable damage.

- DO** uncoil sensor gently by letting the connector hang down while holding sensor
- DO** carefully remove all tangles and sharp bends while uncoiling cable
- DO** ensure cable is completely uncoiled and has no kinks or sharp bends in it before each use
- DO** grasp the connector, not the cable, when disconnecting the sensor from the remote, and pull gently
- DO** hold onto the sensor body while removing any tabs, holders, or sheaths. Be as gentle as possible
- DON'T** let the cable hang on or **near the floor** where it can become tangled
- DON'T** let the cable hang **near a drawer** where it can be kinked
- DON'T** **pull on the cable** to remove from tab, holder or sheath
- DON'T** **tangle cable** during use
- DON'T** **create sharp bends** or knots when untangling

CARE AND MAINTENANCE



To avoid device damage and shock through electric current, do not immerse *ACCENT* Sensor components in any liquid cleaning agents.

Cleaning and Disinfecting

The complete system should only be cleaned using wipes or an alcohol-based disinfectant.

Use a non-corrosive surface disinfectant such as Birex® se.

The *ACCENT* Sensor can be cleaned using a disinfection spray or wipe such as Birex® se.

To avoid malfunction of the *ACCENT* Sensor, make sure that the plug of the sensor does not come in contact with the cleaning agent.



The *ACCENT* Sensor must **not** be sterilized in an autoclave. The high temperature and excessive high pressure will damage the sensor.

Maintenance

Check the system before every use for any possible signs of damage. In the case of any sign of damage do not use the system. Call the service technician immediately.

Disposal

None of the components of *ACCENT* Sensor contain either batteries or accumulators. The Control Module and all other components can be disposed of as electronic waste in accordance with local sanitation codes.

TROUBLESHOOTING

Trouble	Possible Cause	Corrective Action
1. Green LED not lit.	<ul style="list-style-type: none">• Trouble with USB Power supply to Control Module.	<ul style="list-style-type: none">• Make sure the computer power is on.• Check that the USB cable is correctly connected between the Control Module and computer.• Check USB socket connectors for faults.• Replace USB cable.• Replace Control Module.
2. Yellow LED not blinking.	<ul style="list-style-type: none">• Control Module is not yet activated by PC program.	<ul style="list-style-type: none">• Start user-supplied software in order to activate the Control Module.
3. Yellow LED does not illuminate.	<ul style="list-style-type: none">• There is an image present in memory (blue LED lit).	<ul style="list-style-type: none">• Start user-supplied software to process the image.
4. Yellow LED remains blinking yellow after X-ray exposure. No image is transmitted.	<ul style="list-style-type: none">• Image was not stored in memory.	<ul style="list-style-type: none">• Check the Sensor connections to the Control Module.• Check the sensor connections for possible damage.• Replace the Sensor.• Use longer exposure.
5. Green LED blinking or Data transmission error reported by system software.	<ul style="list-style-type: none">• Data transfer interference between Control Module and PC.	<ul style="list-style-type: none">• Check that the USB cable is correctly connected between the Control Module and PC computer.• Restart user-supplied software in order to activate the Control Module.

ACCESSORIES

The following lists the ordering number and description for accessory components available to maintain and expand the ACCENT Sensor to meet your professional needs. Contact your authorized dealer for information.

Item	Part No.	
Size 1 Sensor (1.25m cable attached)	B5120	
Size 2 Sensor (1.25m cable attached)	B5220	
Disposable Infection Control Sheaths for Size 1 Sensor (box of 500)	B5130	
Disposable Infection Control Sheaths for Size 2 Sensor (box of 500)	B5230	
USB Control Module	B5050	
USB Connection Cable (2m length)	B3554	
USB Connection Cable (5m length)	B5027	
Sensor Storage Hanger	B5030	
Control Module Holster with Belt	B5040	

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 or www.allproimaging.com to find a dealer in your area.

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

- 100 Plus
- 2010
- Medscope
- Provecta V
- ScanX® 12
- ScanX® 14
- ScanX® DVM
- ScanX® NDT
- ScanX® 12 EV
- ScanX® 14 PORTABLE
- ScanX® NDT PORTABLE

**AIR
TECHNIQUES**
INC.

1-800-AIR-TECH
(1-800-247-8324)
www.airtechniques.com

 **ALLPRO IMAGING**

1-800-AIR-TECH
(1-800-247-8324)
www.allproimaging.com