User's Manual

The AFHCAN Cart

V4

Document ID: UM-0001

Version 3

The names of any providers and patients used in illustrations or examples in this document are fictitious and were developed in accordance with AFHCAN's deidentification procedures.

Every effort has been made to ensure this manual is a high-quality product. Check AFHCAN's website, **www.afhcan.org**, for updates or additional information.

Please let us know if you have any suggestions for improvement using one of the following means of contact:

AFHCAN
Product Development Team
4000 Ambassador Drive
Anchorage, AK 99508

Phone: 888 449-4435 (toll free)
Fax: 907 729-2269
Email: customersupport@anthc.org

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Preface

About this Document

This document introduces the AFHCAN Cart, model V4 for clinical users. Only the baseline configuration is covered. Supplemental technical details are provided in Appendix A.

The V4 Cart comes with the following devices as a baseline configuration:

- power system, including:
  - main power switch with fused hot and common lines
  - isolation transformer with on/off switch and circuit breaker
  - six-outlet and four-outlet power strips with circuit breakers
- computer system, including:
  - HP rp5700 computer
    - Flashbus Spectrim Lite video capture card (Spectrim Pro is an option)
    - memory - 1 GB - DIMM
    - DVI-D Adapter
    - firewire / USB 2 PCI host adapter
    - wireless network card
  - two USB hubs
  - monitor, keyboard, and mouse
- scanner
- digital camera
- wireless antenna
- multimedia reader

The V4 Cart is a functional system in its out-of-the-box configuration. A variety of additional peripheral devices can be connected to the Cart to expand its functionality. Information about those devices is beyond the scope of this manual.

This manual focuses on the hardware aspects of the AFHCAN Cart. For information regarding operation, refer to the current software user’s manual or on-line help system.

Warning and Caution Symbols

The following symbols and labels are used throughout this manual to alert readers to information which is important to safety, equipment integrity, or successful operation.

Symbol	Label	Meaning
	**Warning**	Failure to comply with the information associated with the symbol or label may result in personal injury and/or serious equipment damage.
	**Caution**	Failure to comply with the information associated with the symbol or label may result in equipment damage.
	Note	Draws the reader's attention to something that might be important for successful operation of the referenced item.

For More Information

This document describes the equipment to a level of detail that will meet most user's needs in the context of clinical use. For more information, contact AFHCAN Customer Support:

AFHCAN Customer Support
Phone: 888 449-4435
Fax: 907 729-2269
email: customersupport@anthc.org

Section 1 – Introduction

1.1 Introduction to the AFHCAN Cart

The AFHCAN Cart is a tool for communicating medical information obtained during a patient encounter from one healthcare provider to another. Additional information may be generated by customer-purchased medical devices connected to the Cart. Outputs from the devices feed directly into the Cart's computer, which temporarily stores and assembles the information into a *case.* The case can then be transmitted over any conventional communications network including telephone lines, satellite links, or other available systems. Because the information remains in its original form, the receiving provider sees exactly what the sending provider sees with little or no loss of detail. The system is an efficient, reliable, and secure means for exchanging medical data. This technology is often used for obtaining a telemedical consult, but it can support other functions such as patient referrals and scheduling.

Depending on the types of user-purchased devices attached to the Cart, the medical information in a case could be in any of the following forms:

- digital images (originating from a digital camera, video otoscope, dental camera, or other video device)
- textual information or documents
  - the AFHCAN tConsult Cart software includes built-in forms for assessment data, patient histories, etc.
  - administrators can design forms for their organizations using tConsult Web
  - comments or instructions can be added to a case
  - other documents or images can be added as attachments
- patient identification information
  - patient information can be entered directly into a database of patient information
  - patient information can be imported from an electronic medical records system
  - patient information is available to all providers in the local network
- scanned images or documents (originating from a scanner)
- data displays and reports (originating from an ECG, digital spirometer, tympanometer, audiometer, vital signs monitor)
- video
  - video clips can be incorporated into a case (originating from a digital camera)
  - Carts equipped with a video camera can engage in live video teleconferencing (this capability is separate from the tConsult Cart software used to develop a case)
- audio (originating from a digital stethoscope)

1.1.1 Store-and-Forward Telemedicine

The AFHCAN Cart uses a ***store-and-forward*** strategy for transmitting telemedicine cases. In contrast to live video or live voice communications, store-and-forward allows information to be gathered, saved, transmitted, and subsequently reviewed as a package (a case). The following are some of the problems that can be encountered when obtaining a medical consult using live voice communications:

- the sending provider and the consulting provider must both be available at the same time
- the communications system or network must be up and running with adequate bandwidth
- live communications are limited to audio and video
- video feeds are prone to lag time and loss of detail

In remote areas that depend on satellite networks, communications can be subject to a variety of technical limitations and interruptions. It can also be a problem scheduling a live consult between providers with busy schedules.

The store-and-forward strategy overcomes these problems. The following steps outline the basic sequence:

- a provider sees a patient and gathers information into the Cart using various peripheral devices, forms, and other resources
- the information being gathered is assembled into a case which is specific to that patient and that particular visit
- the case is permanently saved to the telemedicine server, and is then available to be sent to another provider over the communications network
- the AFHCAN system works with the communications network to ensure all images and other components of the case arrive safely at the destination
- AFHCAN software at the receiving end assembles all the information in the case, and then lets the receiving provider know a case is available for review
- the receiving provider can then open and review the case at his or her convenience (e.g., between appointments)

The store-and-forward strategy does very well at handling large quantities of digital information, such as images or video clips. Store-and-forward can also be used in conjunction with live voice or video communications as a way to provide background information prior to a live session.

1.1.2 The AFHCAN System

The AFHCAN Cart functions as one part of a communications network. In the path from one provider to another there are a number of other parts, each contributing to the process. These components are described in the following sections.

1.1.2.1 AFHCAN tConsult Cart Software

The heart of the AFHCAN telemedicine system is the AFHCAN tConsult Software. AFHCAN designs the software that runs on the computer in the AFHCAN Cart. The software allows the user to perform the following tasks:

- identify the patient, either by selecting an existing patient from a database or by entering new patient information into the database
- describe the patient's condition and history using a variety of forms tailored to various medical specialties
- use the peripheral devices attached to the Cart to obtain images and data, and save this information into a case
- decide what to do with the case:
  - send the case to another provider or group of providers
  - place the case on hold so you can come back later and add information
  - send the case to electronic archives, where it can be saved for future reference and viewed by other providers as needed
  - discard the current changes made during this session with the case

The AFHCAN client software that runs on a Cart is called the *tConsult Cart* software. The software is very intuitive to operate.

1.1.2.2 tConsult Servers

To achieve full functionality, each Cart in an AFHCAN system must be connected to a network server running AFHCAN tConsult Server software. The server stores information about all the Carts that are connected to that server. Servers also store the information about all the patients and all the cases that the server has handled. Usually a server connects to a number of Carts in a particular geographic region. All users with Carts connected to a given server can send cases to each other. [1]

Servers can also be connected to other servers. This allows users with Carts in one region to send cases to users with Carts at a distant location.

If a Cart has temporarily lost network connectivity to a server, it is said to be running in *Off-Line* mode. Much of a Cart's functionality for creating a case is still available, but the case cannot be sent to another provider until network connectivity is restored. Operations that depend on connection to a network are not active when a Cart is running off-line. The temporarily inactive functions are grayed out when displayed in the software.

1.1.2.3 Communication Services

The communications between a Cart and a server, as well as the communications between one server and another, can take place over a variety of communication services. There are many

[1] From a technical standpoint, Carts communicate only with servers, not with each other. Servers forward the information (in the form of a case) to the appropriate provider when he or she logs in at a Cart or workstation running AFHCAN software.

ways these communications services can be set up including satellite systems, microwave systems, terrestrial-based local-area and wide-area networks, telephone lines, etc. These services operate behind the scenes, and a full description of these services is beyond the scope of this manual.

1.1.2.4 AFHCAN Workstations

An AFHCAN workstation is any computer running AFHCAN tConsult Cart software. As mentioned earlier, the AFHCAN tConsult Cart software runs on the computer in the AFHCAN Cart and controls all aspects of the Cart's operation. The AFHCAN tConsult Cart software can also be loaded on ordinary personal computers or laptops, allowing those computers to create, send, and receive cases.

When a healthcare provider originates a case, the AFHCAN Cart is the primary tool for collecting the medical information. The receiving provider normally would not need to add new medical data, but would only need to view the images and data provided. The receiving provider can respond to the case by adding comments, instructions, or questions, and can then send the case back to the originating provider or forward it to another provider.

Of course there is nothing to prevent someone from receiving and reviewing a case using an AFHCAN Cart. The software is the same. The only difference between an AFHCAN Cart and other workstations is the availability of peripheral medical devices.

1.1.2.5 tConsult Web

AFHCAN developed the tConsult Web interface as a way to view cases from any computer with network or Internet access. The consulting provider can add comments or other information to the case, and return it to the originating provider (or forward it to a different provider). There is some limited capability for creating cases using tConsult Web as well.

1.1.2.6 Network Security

The AFHCAN software takes many steps to ensure the integrity and privacy of all data:

- all data is encrypted
- authorized users are approved by an administrator and given passwords
- connections between any points must be approved and certified at both the sending and receiving sites
- all activity within a case and on the network is tracked as a unique event
- custody of a case is systematically transferred so that only one person can open and add to a case at any given time

1.2 Main Components of the AFHCAN Cart

Figures 1 through 7 show the main features of the baseline V4 AFHCAN Cart. Please be aware that your Cart may have additional devices attached. Refer to the user manuals for those devices for more information.

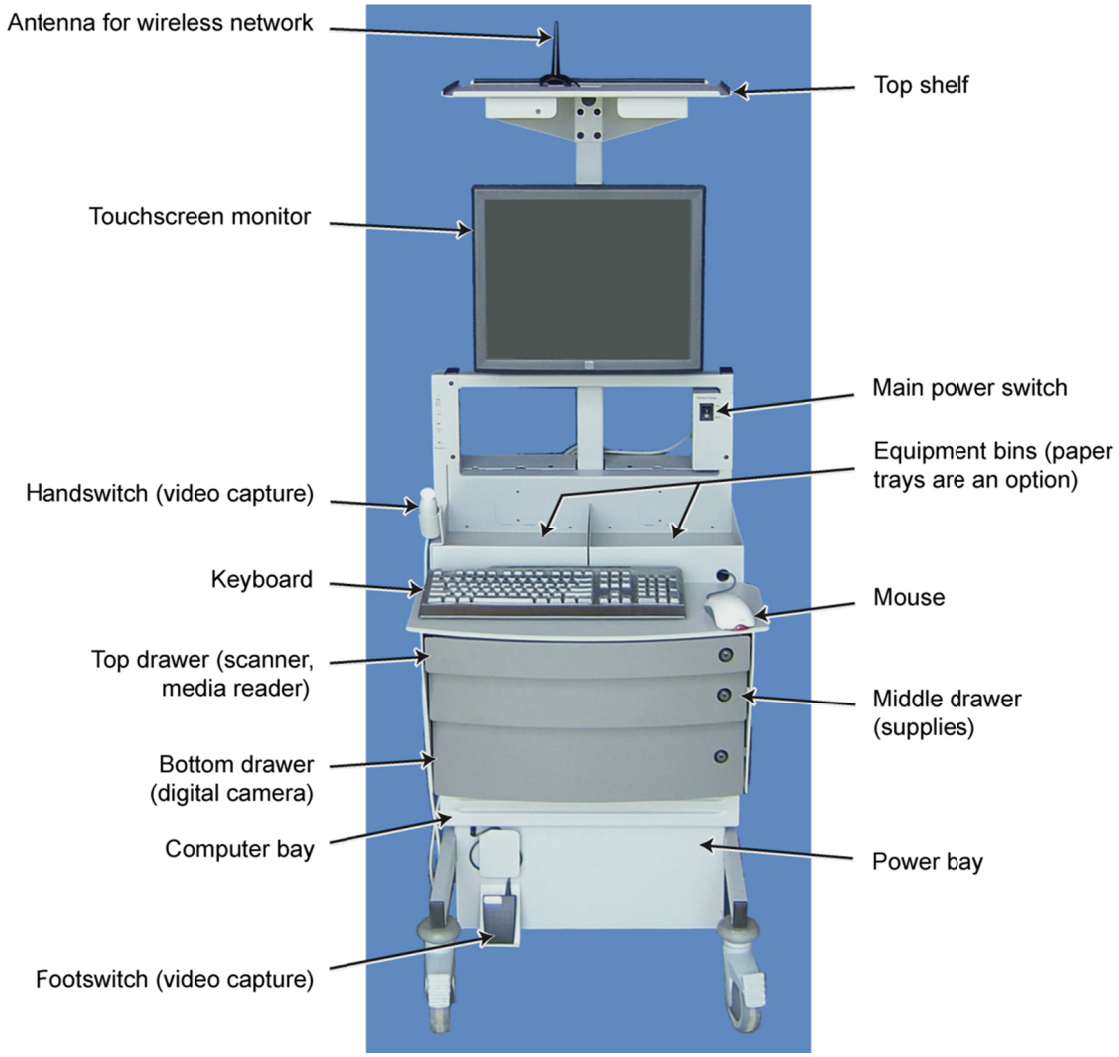

Figure 1
V4 AFHCAN Cart – front view

> **Note:** The terms "main power switch" and "system power" are used interchangeably throughout this manual.

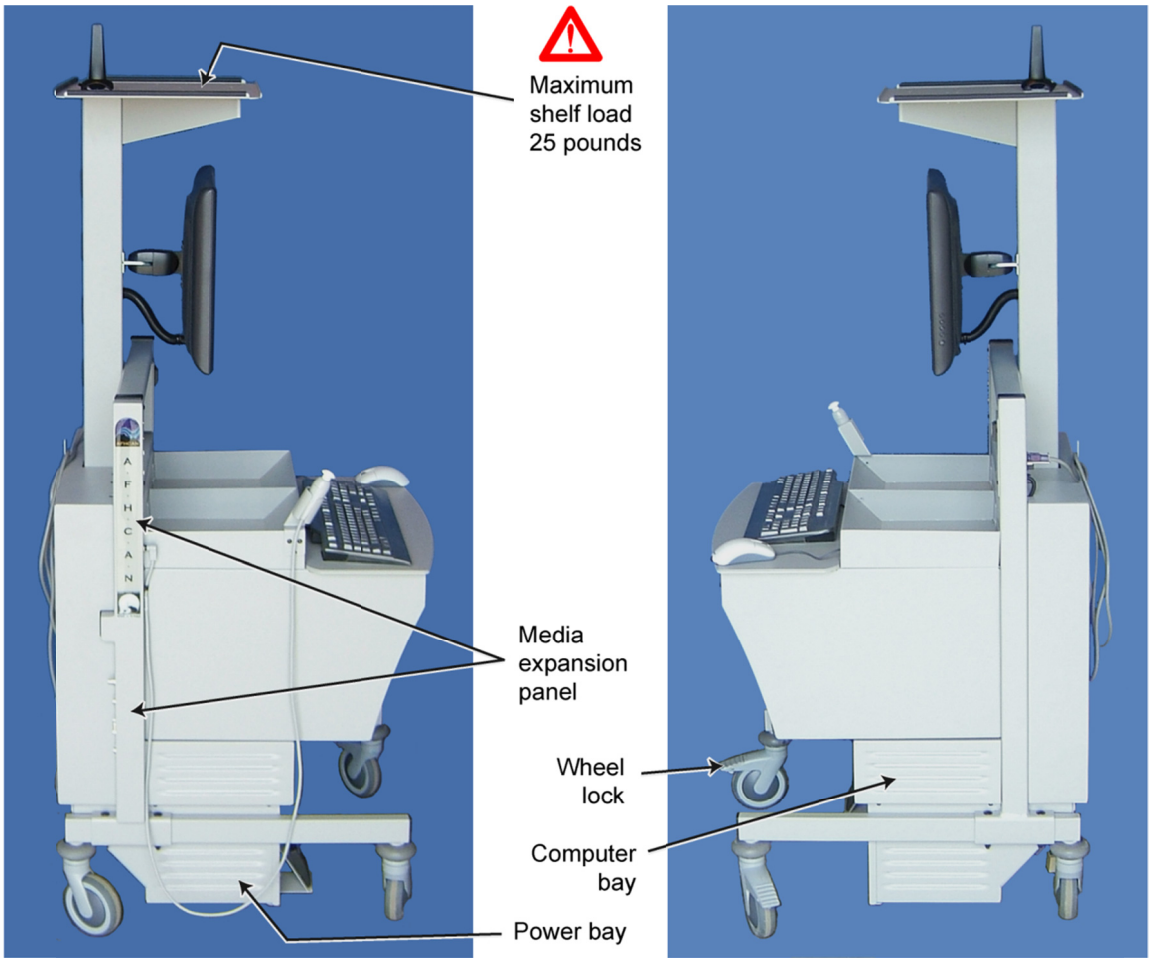

Figure 2
V4 AFHCAN Cart – side views

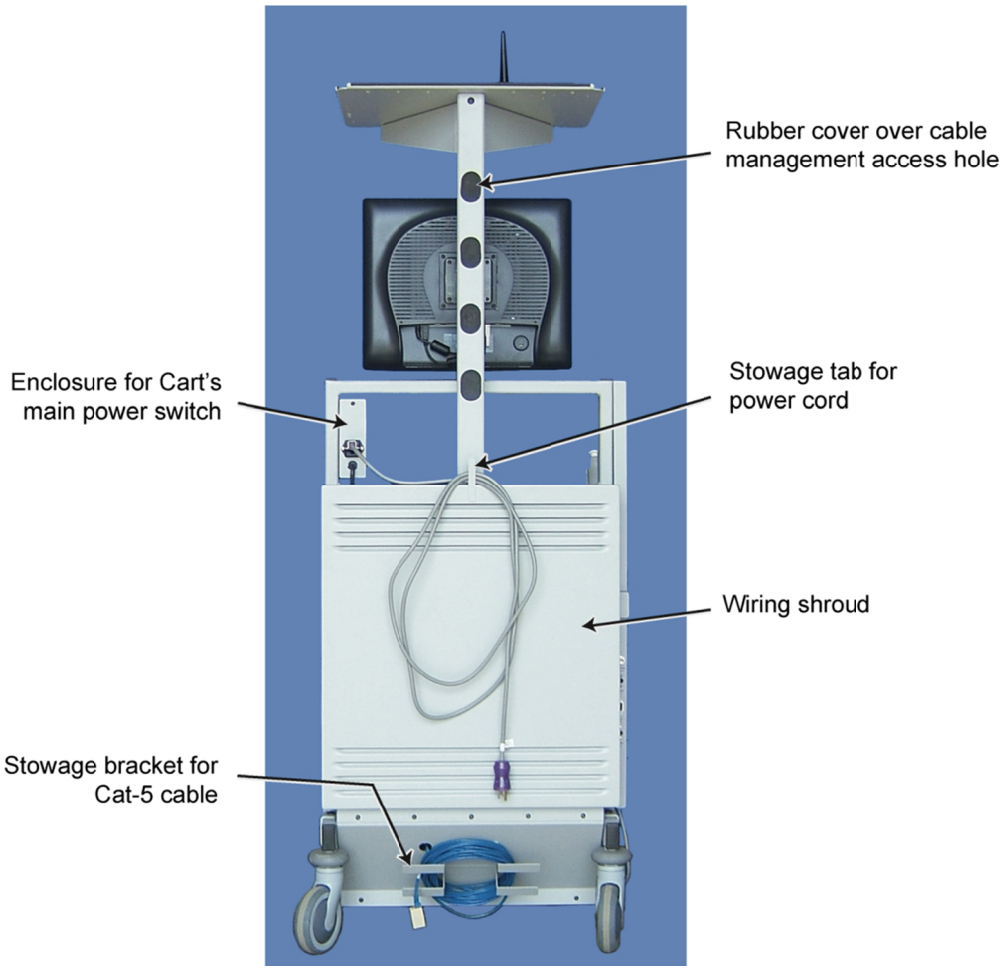

Figure 3
V4 AFHCAN Cart – back

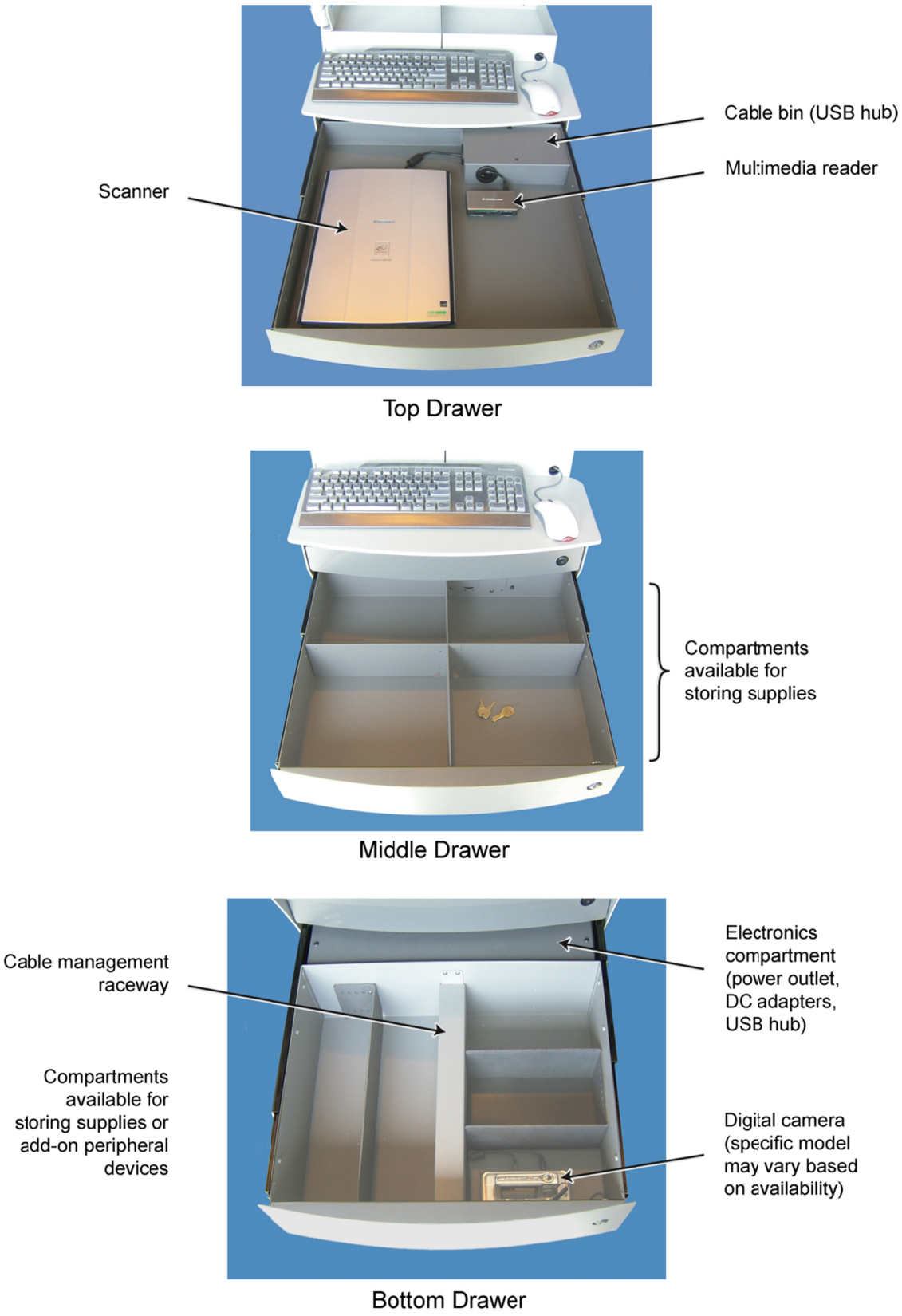

Figure 4
V4 AFHCAN Cart – drawers

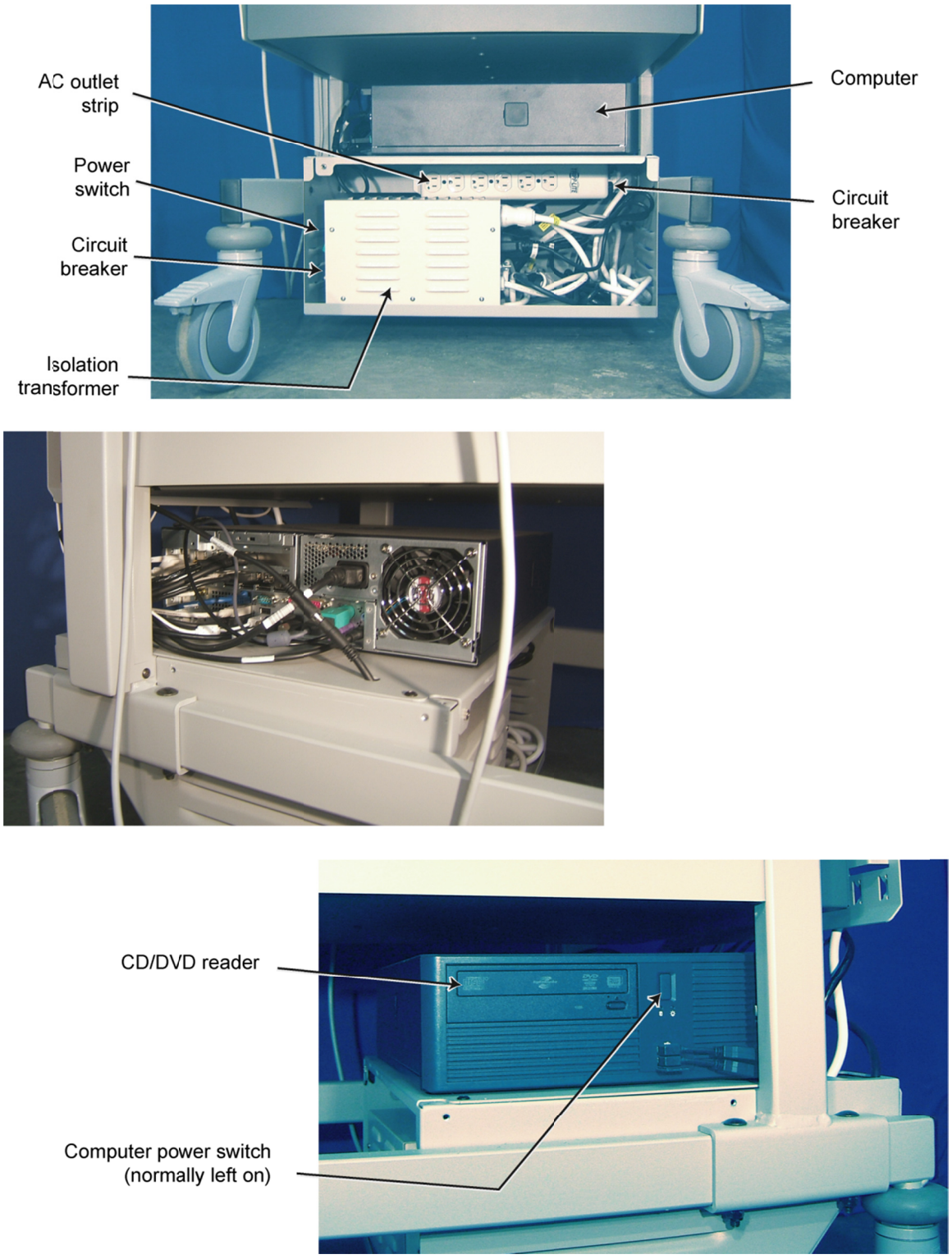

Figure 5
V4 AFHCAN Cart – computer and power bays

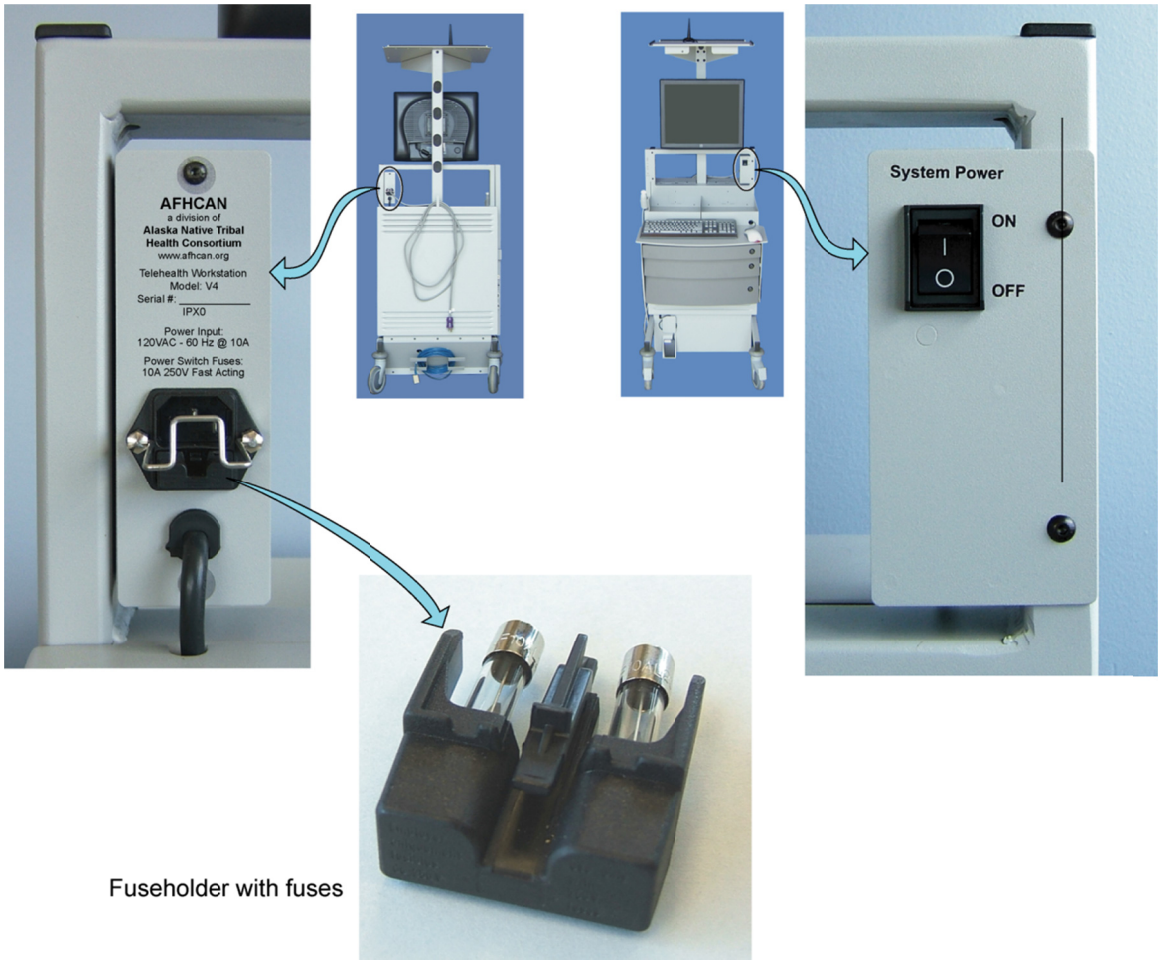

Figure 6
Main power switch (front and back views)

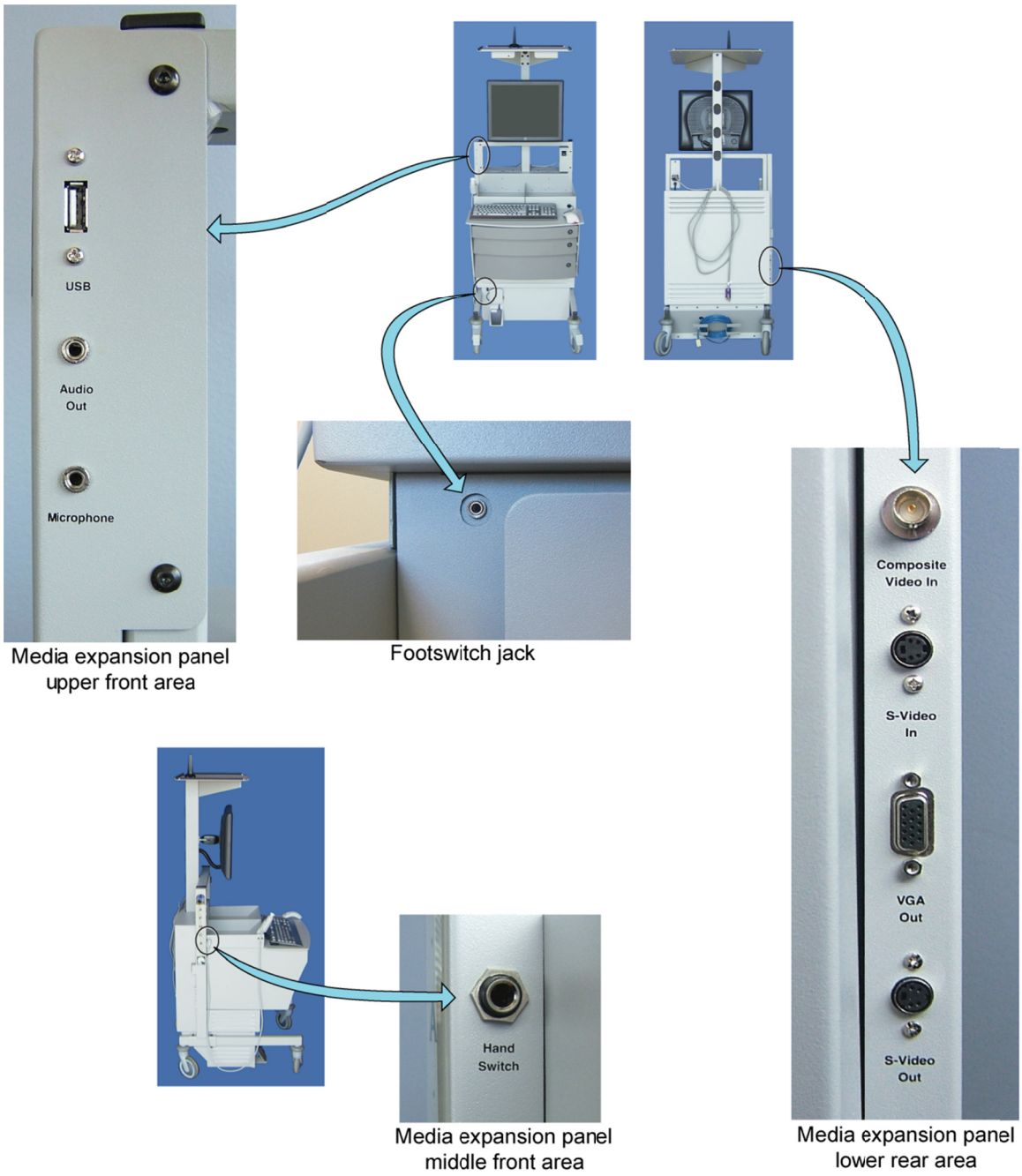

Figure 7
External connection points

Aside from the footswitch, which is rated IP-X8, the AFHCAN Cart is rated IP-X0 with regard to protection from ingress of dust or moisture (i.e., no protection).

1.3 Introduction to Peripheral Devices

The model V4 AFHCAN Cart is equipped with a computer system (CPU, monitor, keyboard, mouse, network cable, and wireless network antenna). It also includes three peripheral devices: a media reader, a scanner, and a digital camera.

1.3.1 Standard Equipment

The items described below are included as standard features of the model V4 AFHCAN Cart.

1.3.1.1 Multimedia Reader

The media reader allows digital images or documents to be read into a case from the various media cards such as those used in digital cameras. This functionality is activated via the **Digital Camera** button in the software. The media reader is located in the right rear area of the top drawer.

1.3.1.2 Scanner

The scanner allows documents or photographs to be scanned in and added to a case. The scanner is controlled by the AFHCAN software, so it is not necessary to use the buttons located on the front panel of the scanner (in fact, the buttons are disabled in the AFHCAN application). The scanner function is activated by the **Scanner** button in the software. The scanner is located on the left side of the top drawer.

1.3.1.3 Digital Camera

A digital camera is included with the Cart. It is housed in a docking station in the front right compartment in the bottom drawer. Cabling for the USB connection and DC power for charging the battery are permanently installed in the bottom drawer. Images are read in from the digital camera's memory via the **Digital Camera** button in the software. The digital camera is a primary tool for dermatology, general trauma, or other visible medical situations.

1.3.2 External Connections

There are nine external connection points on the V4 AFHCAN Cart:

- USB
- Audio Out
- Microphone
- Hand Switch
- Composite Video In
- S-Video In
- VGA Out
- S-Video Out
- Foot Switch

1.3.2.1 USB Port

The USB port allows any USB device to be connected to the Cart. However, in order for the device to function with the AFHCAN tConsult Software, the software must include the programming and drivers needed to control and communicate with the device. The following functionality is built into the tConsult Software:

- A thumb drive or external hard drive can be connected and can be used with the following software features:
  - when used with the Digital Camera function, the tConsult Software will interrogate the attached USB device and read the following types of files into a case: .jpg, .bmp, .png, , .mpg, .wmv, .avi, .mov, .mp3, .wma, , .pdf, .doc, and .tif
  - when viewing an image in a case, the thumb drive can be used for saving a copy of the image. Right-click on the image and select ***Save As***. A window will open allowing you to browse to the thumb drive

    Notes: 1. Be aware of HIPAA requirements when copying images.
    2 The system prevents users from viewing the C: and D: drives.
    3. Right-clicking on an image also accesses advanced image editing.

- Digital cameras can be connected to the USB port provided they conform to one of the following standards:
  - the camera functions as removable media (similar to a thumb drive)
  - the camera conforms to the Windows Image Acquisition (WIA) standard

    Note: For details on how to connect a particular camera to a computer, refer to the manufacturer's user manual.

- The Midmark digital spirometer can be connected to the USB port and used with the Digital Spirometer function. All software and drivers needed to support this device are included in the tConsult Cart software.
- Any USB device that generates a video signal (a webcam, for example) can be connected, but the following steps are necessary to make it work:
  - the drivers for the device must be installed
  - the **Video Source** button must be activated via the Client Setup Utility

  Pushing the **Video Source** button brings up a menu where you can select the driver for the video device. If drivers for more than one video device have been installed, it will necessary to know the name (filename) of the driver associated with the device in order to use it. If a PTZ VTC camera is installed on the Cart, this feature allows you to capture still images into a case from the video stream the camera produces. It is not possible to capture a live video feed into a case using this feature.

1.3.2.2 Audio Out

The ***Audio Out*** jack allows users to listen to audio from the computer on headphones. Connecting a 1/8-inch plug into the jack cuts out the audio feed to the built-in speakers in the monitor. Good headphones will have improved audio quality over the monitor speakers, or they can be used for

private listening. The audio can originate with video sessions (VTC camera installed), video clips from the digital camera, or audio clips brought into a case.

1.3.2.3 Microphone

The ***Microphone*** jack allows a microphone input to be connected to the computer. This applies primarily to video sessions when a VTC camera is installed. When a 1/8-inch plug is inserted into the ***Microphone*** jack, it cuts the signal from the microphone installed with the VTC camera. At the time of this writing, it is not possible to record an audio clip directly into a case.

1.3.2.4 Hand Switch

The ***Hand Switch*** jack allows still images from a video device to be captured into a case. An input from the hand switch triggers the Spectrim Lite video capture card (or Spectrim Pro video capture card, if installed) to capture the available video feed as a still image.

> **Note:** Some devices that can be attached to a Cart have their own trigger switch. For example, the Evolution M-Series Dental Camera has a trigger switch on the handpiece. When that device is installed, it is wired in parallel with the hand switch. The hand switch, the trigger switch, and the foot switch (discussed later) can activate the capture.

1.3.2.5 Composite Video In

The ***Composite Video In*** connection allows an external composite video source to be connected to the video capture card. With the Spectrim Lite (standard in the baseline V4 build), the ***Composite Video In*** connector is wired in parallel (via a Y cable) with internal wiring for permanently attached composite video devices (such as a dental camera). The following points pertain to the Spectrim Lite video capture card:

- a suitable button must be enabled in the Client Setup Utility so the functionality is available in the ***Add To Case*** screen
- in general, the Spectrim Lite video capture card can only handle one composite video source at a time
  - the default input for a dental camera (if one is mounted on a Cart) is the composite video input, wired internally to a Y cable
  - it is necessary to turn off any other video sources (e.g., the dental camera) when connecting an external video source to the ***Composite Video In*** connector

1.3.2.6 S-Video In

The ***S-Video In*** connection allows an external s-video source to be connected to the video capture card. With the Spectrim Lite (standard in the baseline V4 build), the ***S-Video In*** connector is wired in parallel (via a Y cable) with internal wiring for permanently attached s-video devices (such as an otoscope). The following points pertain to the Spectrim Lite video capture card:

- a suitable button must be enabled in the Client Setup Utility so the functionality is available in the ***Add To Case*** screen

- in general, the Spectrim Lite video capture card can only handle one s-video source at a time
  - the default input for a video otoscope (if one is mounted on a Cart) is the s-video input, wired internally to a Y cable
  - it is necessary to turn off any other video sources (e.g., the otoscope) when connecting an external video source to the ***S-Video In*** connector

1.3.2.7 VGA Out

The ***VGA Out*** connector allows the computer's monitor output to be displayed on an external device such as an overhead projector. The monitor on the Cart receives its signal from an internal DVI card. The signal going to the monitor on the Cart is separate from the ***VGA Out*** signal, so both display devices can be used at the same time.

1.3.2.8 S-Video Out

The ***S-Video Out*** connection applies only when a Spectrim Pro video capture card is installed. It is not used on the baseline V4 Cart. If the optional Spectrim Pro video capture card is installed, the ***S-Video Out*** provides a parallel output of the active video device (either composite or S-video) for display on other monitors or overhead projectors, or for use with S-video recording devices.

1.3.2.9 Foot Switch

The foot switch jack is located in the upper left corner of the power bay. It is wired in parallel with the hand switch and any additional trigger switches from other devices (such as the Evolution M-Series Dental Camera). An input from any one of these devices will trigger the Spectrim Lite or Spectrim Pro video capture card to capture a still image from an incoming video feed into a case.

The footswitch is rated IP-X8, indicating it is suitable for use in environments where it may be subject to complete immersion. (All other parts of the AFHCAN Cart are not rated with regard to protection from ingress of dust or moisture.)

1.4 Clinical Considerations

The following are some points worth considering when incorporating an AFHCAN Cart into a clinical setting:

- in general, the AFHCAN Cart is designed to support screening-level medical examinations and consults
- the Cart is designed to supplement and enhance existing channels of communication
  - it is good to have a working relationship with a provider in place before sending cases to that provider for a consult
  - never hesitate to use voice communications as a way to follow up on cases or as a way to make sure the needed information is collected

- a little practice and experience goes a long way in developing your skills as a user
  - the more experience people have in using the Cart, the easier it is to use
  - we encourage new users to take advantage of training opportunities provided by AFHCAN
- your use of the Cart must always remain within the bounds of:
  - good clinical practice
  - HIPAA regulations
  - the policies and procedures of your facility
  - your own clinical training, experience, and judgment

1.5 Warnings and Cautions

Please observe the following points:

- ⚠ **Warning:** Follow all warnings and cautions in the manufacturer's literature for any devices attached to the Cart, as applicable.
- ⚠ **Warning:** Do not expose the Cart or any of its peripherals to water (aside from a slightly dampened cloth for cleaning). (The footswitch is rated IP-X8, meaning it is protected during use from ingress of water at moisture levels up to and including complete immersion.)
- ⚠ **Warning:** Do not remove any of the protective covers or wiring shrouds during normal operation.
- ⚠ **Warning:** Once the Cart is positioned, push the locking levers down on the wheel locks (front wheels only) to prevent the Cart from accidentally moving during use.
- ⚠ **Warning:** Do not connect items which are not specified as compatible with this system. Doing so may compromise safe use of the equipment.
- ⚠ **Caution:** As a computer-based system, the Cart should not be subjected to unusually strong electromagnetic fields such as might occur with large HVAC motors or MRI machines.
- ⚠ **Caution:** As a computer-based system, the Cart can generate small amounts of electromagnetic energy, much of which is shielded by the sheet metal surrounding the computer. The Model 1928L user guide for the touchscreen monitor includes the following statement: "The ET1928L uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. "

1.6 General Specifications and Operating Limits

1.6.1 Device Labeling

Table 1 shows the labels used on the Cart and the meaning of each label (refer to Figure 6 and Figure 7 for locations).

Table 1

Labeling used on the Cart

Label	Meaning
System Power ON OFF	Identifies the Cart's main power switch. Placing the rocker switch into the ON position (I) applies power to the computer and all attached peripheral devices. Each peripheral device can then be turned on using its own power switch. Placing the rocker switch into the OFF position (O) removes power from the computer, attached peripheral devices, and any other components on the Cart.
Alaska Federal Health Care Access Network a division of Alaska Native Tribal Health Consortium www.afhcan.org	Indicates the Cart's manufacturer.
Telehealth Workstation Model V4 Serial #: _____	Indicates device name, model number, and serial number.
IPX0	Indicates device's overall rating with regard to protection from ingress of dust and moisture (not protected)
Power Input: 120VAC - 60Hz @ 10A	Indicates device input power characteristics.
Power Switch Fuses: 10A 250V Fast Acting	Identifies the rating and type of externally accessible fuses. Two fuses are located on the back of the power switch where the AC power cable connects to the assembly, one for each leg of the power connection (but not ground). The fuses are Bussman GDB fast-acting, glass tube, 5 x 20 mm.
USB	Identifies a general purpose USB port that allows additional peripheral devices to be connected.
Audio Out	Identifies a 1/8-inch stereo headphone jack for audio output.
Microphone	Identifies a 1/8-inch microphone input.

Label	Meaning
Hand Switch	Identifies a 1/4-inch jack for connecting the hand switch.
Composite Video In	Identifies a composite video input port that allows a video signal from an additional device to be brought into a case.
S-Video In	Identifies an S-Video input port that allows a video signal from an additional device to be brought into a case.
VGA Out	Identifies a VGA output port which allows a second monitor or overhead projector to be connected to the Cart. Anything that is being displayed on the Cart's touchscreen monitor will be displayed simultaneously on the second device.
S-Video Out	Not applicable to the standard V4 Cart. Used only when a Spectrim Pro video capture card is installed, which includes an S-Video Out signal.

1.6.2 Operating Limits

Tables 2 and 3 list the environmental limits for the AFHCAN V4 Cart.

Table 2

Operating limits

Parameter	Range
Temperature	50°F to 95°F (10°C to 35°C)
Humidity (non-condensing)	30% to 70%
Pressure	227 mmHg to 760 mmHg (303 hPa to 1,013 hPa)

Table 3

Non-operating limits

Parameter	Range
Temperature	4°F to 120°F (-16°C to 49°C)
Humidity (non-condensing)	30% to 85%
Pressure	227 mmHg to 760 mmHg (303 hPa to 1,013 hPa)

Section 2 – Operation

2.1 Basic Operating Procedures

The following is an introduction to Cart operation suited to a basic functional checkout.

2.1.1 Guidelines on Placement and Setup

Find a location for the Cart where there is room for both the user and the patient to be seated nearby. Make sure there is a power outlet available, as well as a network cable connection point if wireless access is not being used.

⚠ **Warning:** Be sure to lock the wheels when the Cart is in the desired position. Push the locking levers down by gently stepping on the tip of the lever.

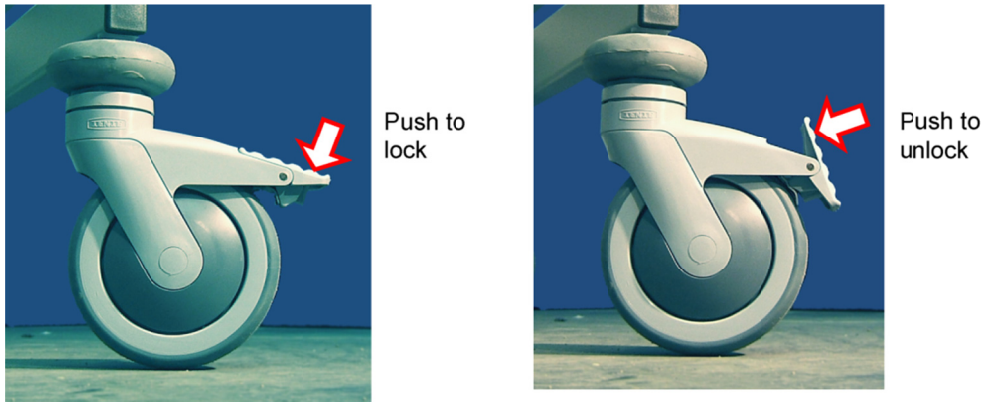

Figure 8
Wheel locks

2.1.2 Applying Power

Turn the ***SYSTEM POWER*** switch to ***ON*** (**I**). This makes power available to all devices installed on the Cart.

> **Note:** With just a few exceptions, the standard practice is to leave most peripheral devices switched on at all times with power to individual devices being controlled by the Cart's ***System Power*** switch. This includes the monitor and scanner. The digital camera is normally left off when in the docking station.

Once the ***System Power*** switch is turned on, the computer will boot up to the AFHCAN shell. The shell allows you to either open the AFHCAN software or shut down the system. To move to the login screen, touch the **Telemedicine** button or click on it with the mouse.

2.1.3 Logging Into the Software

At the login screen, enter a username and password. Contact your system administrator or AFHCAN for assistance. Note that the password is case-sensitive. Press the **Login** button.

On successful log-in, the ***Start*** screen will be displayed (the name of the screen is in the upper left corner).

2.1.4 Operating the Scanner

To operate the scanner, proceed as follows:

1. From the ***Start*** screen, select **Create a New Case**.
2. At the next window, select **Real Case** or **Test Case.** (Test cases use fictitious patients and are used for training. Test patients are safe for testing and training because they are never confused with real patient information.) This takes you to the ***Add To Case*** screen.

   Note: If the devices below are only going to be functionally checked out, it is not necessary to select a patient or enter patient data.

3. From the ***Add To Case*** screen, select the **Scanner** button. This takes you to the ***Scanner*** screen.
4. From the ***Scanner*** screen, select the **Black and White**, **Gray Scale**, or **Color** button. The scanner will automatically scan whatever is on the scanner table, and create a thumbnail image that appears at the left on the screen. A larger version of the image appears in the middle of the screen.
5. The presence of a thumbnail image indicates a successful scanner test.
6. To discard the image or images, click the **Back** button. A window will pop up advising you that images will be lost. Click **Yes** to confirm the operation and return to the ***Add To Case*** screen.

2.1.5 Operating the Digital Camera

To operate the Kodak V1233 digital camera, proceed as follows:

1. Remove the digital camera from the cradle, press the camera power button to turn it on, and press the shutter button to take a photograph.
2. Press the power button to turn the camera off.
3. Place the camera in the docking station.
4. Press the bar at the front of the docking station. This allows the camera to communicate with the computer. (This must be done before the next step.)

   Note: Pressing the **Digital Camera** button in the software before activating the digital camera (as described in step 4) results in an error message explaining the correct sequence. Press **Cancel** and resume with step 4.

5. From the ***Add To Case*** screen, select the **Digital Camera** button. Thumbnail images of all photographs on the camera will appear at the left of the screen. The appearance of thumbnails successfully tests the camera.

6. To discard the image or images, click the **Back** button. A window will pop up advising you that images will be lost. Click **Yes** to confirm the operation and return to the ***Add To Case*** screen.

> **Note:** After about ten minutes of not communicating with the system, the camera will automatically return to it's previous status (off and recharging).

2.1.6 Operating the Media Reader

To use the media reader, proceed as follows:

1. Place a suitable media card with an image file stored on it into the correct slot in the media reader.

> **Note:** For the purposes of initial familiarization and operational checkout, you can use the SD memory card from the digital camera. Take a photograph, then remove the SD memory card by sliding the battery cover on the bottom of the camera open and pressing down on the SD card to unlatch it.

2. From the ***Add To Case*** screen, select the **Digital Camera** button. Thumbnail images of all photographs on the card will appear at the left of the screen. The appearance of thumbnails successfully tests the media reader.

3. To discard the image or images from the case, click the **Back** button. A window will pop up advising you that images will be lost. Click **Yes** to confirm the operation and return to the ***Add To Case*** screen.

2.1.7 Shutting Down

Close the software and turn off the Cart as follows:

1. Press the **Log Out** button in the upper right corner of the software. A window will pop asking you to verify your intent to log out. Click **Yes**. This returns you to the AFHCAN shell.

2. From the AFHCAN shell, press **Shutdown**. A window will pop asking you to verify your intent to shut down the computer. Click **Yes**. A message will appear reminding you to place the digital camera in the drawer.

3. The software will automatically shut itself down, and display a message that says, "It is now safe to turn off your computer."

It is now safe to turn the Cart off.

4. Once the message above is displayed, simply turn the ***System Power*** switch to ***OFF*** (**0**).

Section 3 – Routine Maintenance

4.1 Care and Cleaning

Routine maintenance is limited to cleaning of external surfaces. In general, the surfaces of the Cart can be wiped down with a cloth slightly dampened with a mild detergent or dilute disinfectant solution.

The monitor screen surface and scanner top can be cleaned with a soft cloth lightly moistened with a suitable glass cleaner.

It is recommended that routine cleaning be performed once a month, or more often if local conditions warrant.

4.2 Elementary Troubleshooting

On the whole, the Cart is robust. The computer automatically reboots to the AFHCAN software after any power outage.

> **Note:** It is always best to initiate Cart shutdown from within the AFHCAN software. This ensures no data is lost.

The first step in troubleshooting consists of verifying that power is available:

- ensure the Cart is plugged into a working wall outlet
- ensure the power cable is connected to the box housing the main power switch
- ensure the main power switch is on
- ensure the power switches of the various devices are ON as needed (e.g., the monitor)

In addition, check any cable connections which are in view or readily accessible without removing any protective shrouds or covers.

Appendix A - Technical Description

Device Classifications

The footswitch is classified as IP-X8, meaning it can be used while subject to complete immersion in water. All other parts of the AFHCAN cart are classified IP-X0 (no protection from ingress of dust or moisture).

The AFHCAN V4 Cart is rated as Class I equipment. It is not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen, or with nitrous oxide. The normal mode of operation is continuous.

Additional Information

AFHCAN will make available, on request, circuit diagrams, component parts lists, descriptions, and calibration instructions that will assist the user's qualified technical personnel to repair those parts that are designated by AFHCAN as repairable.

Critical Components and Power Distribution

A diagram showing the power distribution for critical components is included as an attachment immediately following the last page of this manual.