Dynamic Platform

USER GUIDE

CIRS

Tissue Simulation & Phantom Technology

Overview

Model 008PL Features

- Move any phantom with sub-millimeter accuracy and reproducibility

- Surrogate and phantom motion fully and independently programmable

- Easy transport, set-up and operation

- Motion software enables different cycles, amplitudes and waveforms

- Surrogate breathing platform accommodates numerous gating devices

CIRS

The CIRS Dynamic Platform provides an economical, user-friendly solution for the complex tasks associated with tumor motion and patient positioning in radiation therapy.

The platform is made from stiff, low-density plastics. The device enables precisely controlled inferior-superior motion up to 50 mm for any phantom up to 70 lbs. Multiple types of dosimeters and dosimeter arrays can be positioned on the platform and used for dose verification of moving target treatment plan. A removable pin system in the main platform allows consistent placement and fixation of almost any phantom and traditional laser alignment marks enable accurate positioning of the entire device. An independently controlled smaller platform provides Posterior-Anterior surrogate chest wall motion.

Table of Contents

Unpacking Instructions

1. Before you open the case check the three **Drop 'N' Tell** indicators on the right side of the case.

Drop 'N' Tell *shipping damage indicator shows when a case has been dropped in transit and contains potential damaged goods. The sensor displays a red arrow when applied before shipping. If the container receives a shock exceeding 25 G force, the sensor display arrows will change to blue. If the sensor has been activated and is blue, a claim may need to be filed with the carrier. If activated, take extra care in inspecting the components as they are unpacked, assembled and tested*.

Note: If there is any damage to the packaging case, containers, foam, and components, or operation, Immediately contact the carrier and the phantom supplier, and keep all packaging for carrier inspection.

2. Remove foam insert from case and set aside.

3. Remove cables from case and set aside.

4. Remove motion controller from case and set aside.

5. Remove foam insert from top of platform and set aside.

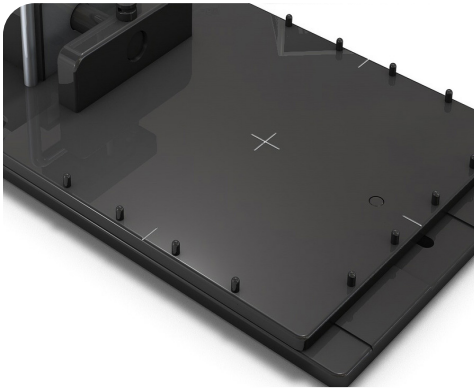**6.** Using handles, pull platform base and actuator assembly from case.

7. Inspect the list of parts before assembly. Refer to pack list on page 7. Verify all parts received.
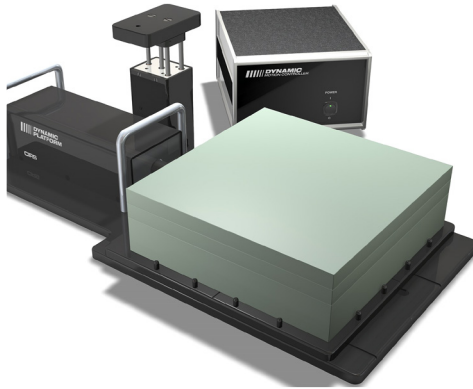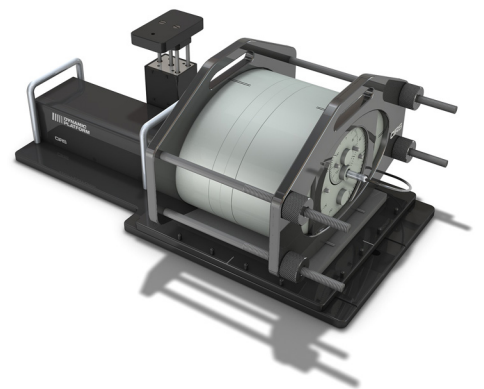
Assembly Procedure

1. Insert platform pins in predrilled holes on perimeter of platform.

2. This will secure standard Plastic Water® material (purchased separately).

3. Other phantoms may require user to drill additional holes in platform.
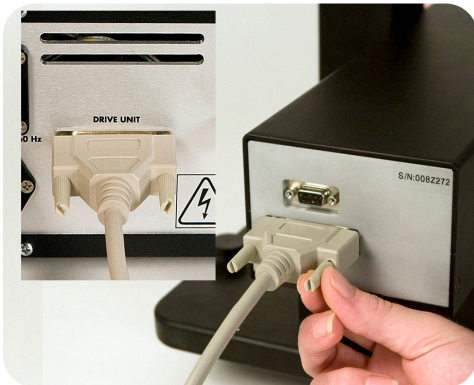
4. Plug the Cable DB25 m/m to back of controller and to back of actuator.

5. Plug the Cable DB9 m/m which leads from 3rd axis gating device to back of actuator.

6. Attach Ethernet cable to back of controller.

7. Plug power cord into the back of controller. Plug other end of power cord into the wall outlet.

8. The controller and actuator are connected, powered and ready for use.

Setup notes for Dynamic Phantoms with controller connecting to a PC using an Ethernet connection:

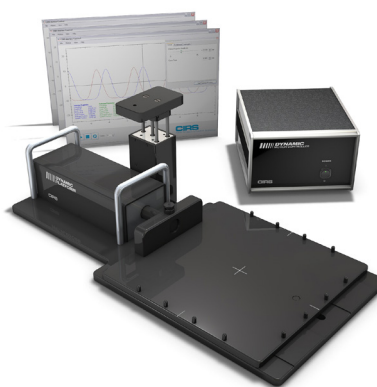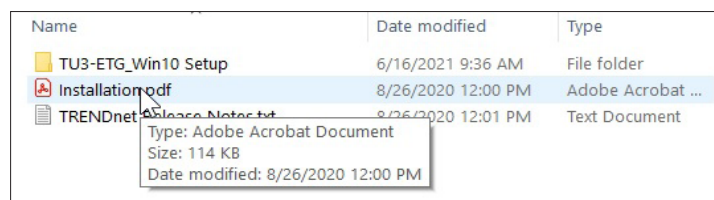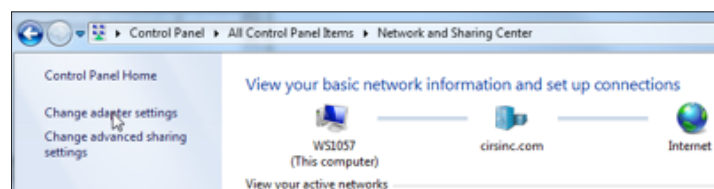*The following are the recommended steps to install the "USB to Network Adapter" that was shipped with this phantom. The new Network Connection must be setup as a Static IP address in order for the PC to communicate with the motion controller of the phantom.*

1. To install the necessary driver, unzip the "USB-to-Network Adapter" folder found on the provided USB drive or download the zipped folder from the CIRS website. Unzip to a known location and follow instructions from "Instructions.pdf" document.

Name	Date modified	Type
TU3-ETG_Win10 Setup	6/16/2021 9:36 AM	File folder
Installation.pdf	8/26/2020 12:00 PM	Adobe Acrobat ...
TRENDnet Release Notes.txt	8/26/2020 12:01 PM	Text Document

Type: Adobe Acrobat Document
Size: 114 KB
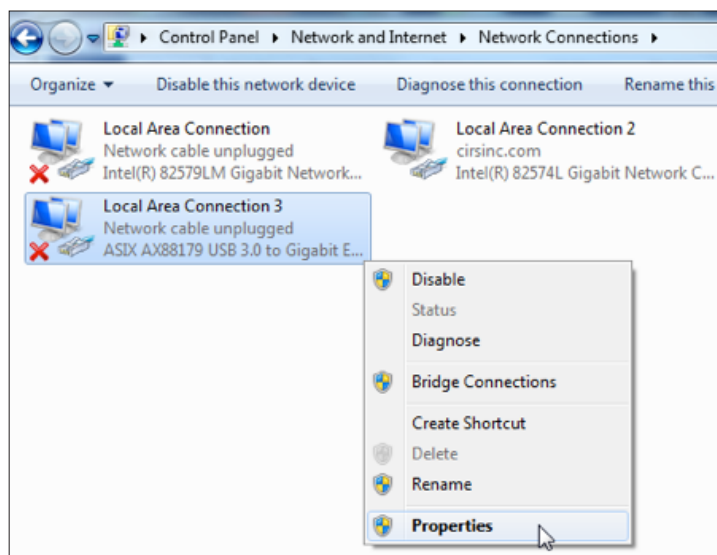Date modified: 8/26/2020 12:00 PM

Note: The provided "USB to Network Adapter" can act as Plug and Play device on some PC but CIRS recommends doing the installation of the driver as outlined above.
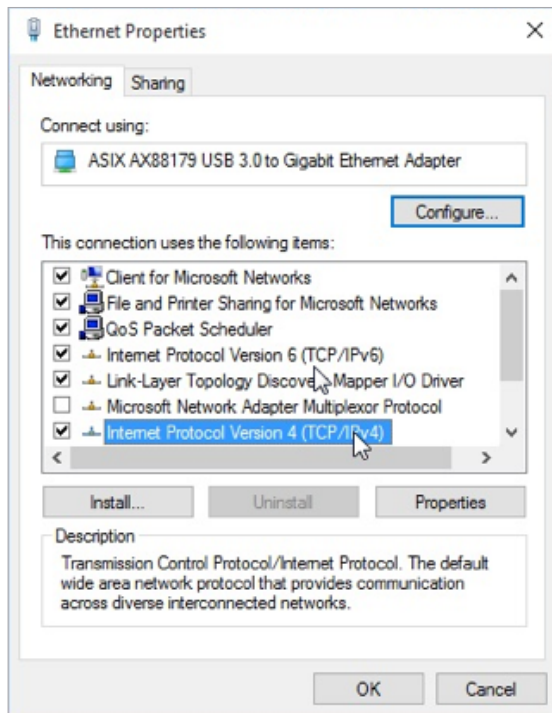
2. Follow the on screen steps and acknowledge all the messages related to driver's installation. Once the driver installation is finished, plug the "USB-to-Network Adapter" into your PC's USB port and acknowledge the Windows installation message. Exit the "USB-to-Network Adapter Software" menu by clicking Exit.

3. From the Control Panel, open the Network and Sharing Center and then select "Change adapter settings".

Control Panel ▸ All Control Panel Items ▸ Network and Sharing Center

Control Panel Home

View your basic network information and set up connections

Change adapter settings

Change advanced sharing settings

WS1057 (This computer)　　cirsinc.com　　Internet

View your active networks

4. Providing that the installation of the "USB-to-Network Card" was successful, the newly installed Network Adapter should show as "ASIX AX88179 USB 3.0 to Gigabit Ethernet Adapter". Select it's Properties using the right mouse click menu as shown below.

Control Panel ▸ Network and Internet ▸ Network Connections ▸

Organize ▾　Disable this network device　Diagnose this connection　Rename this

Local Area Connection
Network cable unplugged
Intel(R) 82579LM Gigabit Network...

Local Area Connection 2
cirsinc.com
Intel(R) 82574L Gigabit Network C...

Local Area Connection 3
Network cable unplugged
ASIX AX88179 USB 3.0 to Gigabit E...

Disable
Status
Diagnose
Bridge Connections
Create Shortcut
Delete
Rename
Properties

5. Select Internet Protocol Version 4 (TCP/IPv4) and click on properties

6. In the internet Protocol Version 4 (TCP/IPv4) properties window, change from default "Obtain an IP address automatically" to "Use the following IP address:" Enter "192.168.0.101" as the IP address and "255.255.255.000" as the Subnet mask. *Note: If an IP address conflict occurs because IP address 192.168.0.101 is already assigned to another Net work Adapter, the user can try any other IP address between 192.168.0.102 and 192.168.0.249.*
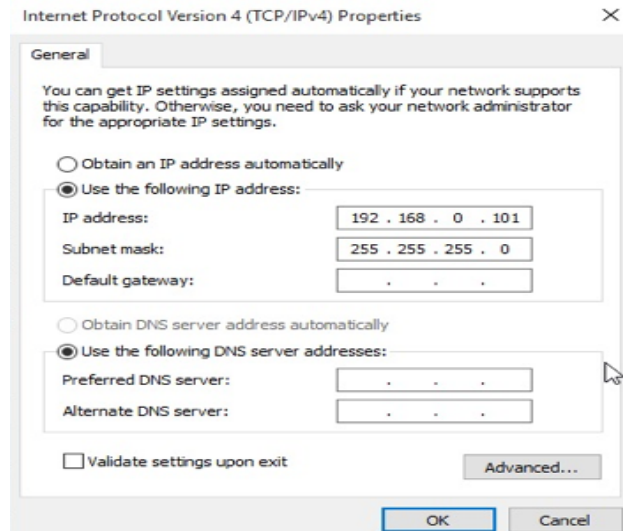
7. Once the IP address is entered, click OK. Connect the PC to the Controller using the provided Ethernet cable by inserting one end of the cable in the controller's Ethernet port and the other one in the "USB-to-Network Adapter". Power on the controller. To check that the PC to controller connection was successful, ensure the icon of the "ASIX AX88179 USB 3.0 to Gigabit Ethernet Adapter" in the Control Panel matches the image below. Network Connection can be renamed using the right mouse click menu.
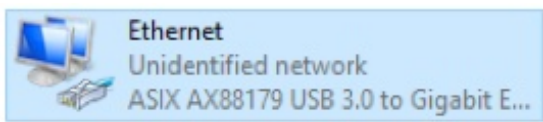
8. A more in depth check of the PC-to-controller communication connection can be done by running a "ping command" in Command Prompt as seen in the image below. To ping the controller, type "ping 192.168.0.250" and press enter. Ping certifies IP-level connectivity to another TCP/IP device. If you receive Ping statistics for IP address 192.168.0.250 (controller IP address) the communication connection between the PC and controller was successful.
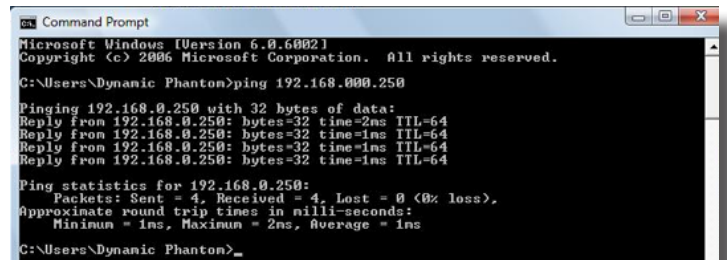
CIRS Motion Control Software

CIRS MOTION CONTROL SOFTWARE SYSTEM REQUIREMENTS

Windows XP® / Vista / Windows 7/ Windows 8/ Windows 10 (32 and 64 Bit)

Pentium 3® or equivalent

512 MB RAM, 2 MB of available disk space

INTRODUCTION

CIRS Motion Control is an application which allows you to control the movement of the CIRS Model 008A Dynamic Thorax Phantom and model 008PL Dynamic Platform. With CIRS Motion Control, you can quickly set up a movement based on a library of pre-defined motions, including Sin, Cos4, Cos6, Sawtooth, Sharkfin, Hysteresis (Model 008A only) and Continous Drift, Transient Excursion, Persistent Excursion, High-Frequency Excursion, or you can import custom motion data from any tab-delimited or comma- separated text file. CIRS Motion Control also allows you to save any motion to easily access the same parameters for repeated calibration and testing.

INSTALLATION

The CIRS Motion Control application requires the Trio PC Motion library, which allows the computer to recognize the Trio controller board in the Dynamic Phantom or Platform. To install the Trio PC Motion library, double-click Trio_PC_Motion_ActiveX_2_12_0_Setup and follow the steps in the InstallShield Wizard.

To install CIRS Motion Control, double-click MotionControlSetup or Setup and follow the steps in the Setup Wizard. The Microsoft.NET Framework Version 3.5 is required for the application to run.

GENERAL USE

The CIRS Motion Control Software is preinstalled on the optional computer. Help can be launched from **Help Menu**. A copy of the software is included on a CD or USB drive.

CIRS does not support 3rd party equipment. Please refer to the included documents for warranty and service information for the ACER brand computer (computer optional).

The software automatically creates a log file where data about waveform parameters are saved. The log file is usually located under the current user in the Application Data folder. A Windows OS search function can be used to find the log file. Searching hidden files and folders should be enabled.

The log file provides a record of the motion history of the device and can be used as objective evidence that proper QA was performed.

SOFTWARE USER MANUAL & SOFTWARE UPGRADES

CIRS Motion Control software has an online user manual. After software installation, a copy may be viewed and downloaded using either the "Check for Updates" button from Help Menu and selecting "Motion Control User Manual.pdf" or by pointing a web browser to the CIRS Software Updates webpage: http://www.cirsinc.com/MotionControlUpdates/Motion_Control_User_Manual.pdf

If the end-user is offline during use of the phantom, it is recommended that a copy of the CIRS Motion Control User Manual is downloaded and saved. Once a copy of the manual is saved in a known location, the PDF document can be opened and viewed in a window separate from the CIRS Motion Control software window to aid in phantom set up and use.

The user manual is regularly updated to incorporate new information based on the addition and/or modification of features as well as end-user feedback.

CIRS recommends that the end-user routinely check the CIRS Software Update webpage using the "Check for Updates" button from Help Menu. This page indicates the current software version. The latest free software upgrade is posted as soon as it becomes available. Instructions for updating the software are also posted. Please note, controllers with serial numbers containing P136 may experience PC communication failuers upon updating Windows OS. If this occurs, CIRS strongly recommends a motion controller update. For details on how to upgrade, refer to the model 008A product brochure.

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Safety

GENERAL SAFETY NOTICES

The following general safety notices supplement the specific warnings and cautions appearing elsewhere in this manual. They are recommended precautions that must be understood and applied during operation and maintenance of the equipment covered herein.

SAFETY PRECAUTIONS

Operating and maintenance personnel must observe all safety regulations. High voltages of 110-250 volts at 50/60 Hertz are used in this equipment. Failure of the operator and maintenance personnel to observe all safety precautions could result in personal injury, damage to the equipment, and loss of product effectiveness. The general safety precautions that must be observed are as follows:

⚠ **WARNING:**
HIGH VOLTAGES CAPABLE OF CAUSING DEATH ARE USED IN THIS EQUIPMENT. USE EXTREME CAUTION WHEN OPERATING AND SERVICING THE CONTROLLER. DEENERGIZING THE CONTROLLER BY USING THE POWER SWITCH DOES NOT REMOVE THE 110-250VAC POWER EXCITATION FROM THE CONTROLLER. THESE VOLTAGES REMAIN PRESENT ON THE CONTROLLER POWER SWITCH AND POWER CONNECTOR UNLESS IT IS DISCONNECTED.

CLEANING

You can clean the phantom with a soft cloth dampened with water and mild detergent. Do not use disinfectants or solvent-based cleaners or sprays.

⚠ **WARNING:**
TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY WHEN USING THE MOTION CONTROLLER, FOLLOW THESE BASIC PRECAUTIONS:

- There are no user-serviceable parts inside. Refer servicing to qualified service personnel.

- Use only a grounded 3 prong electrical out let when connecting this product to a power source. If you do not know whether the outlet is grounded, check with a qualified electrician.

- Do not remove ground prong.

- Do not install or use this product near water, or when you are wet.

- Operate the product securely on a stable surface.

- Set up the product in a protected location where no one can step on or trip over the power cord and the power cord cannot be damaged.

- It is recommended that the customer install an AC surge arrestor in the AC outlet to which the Controller is connected. This is to avoid damaging the equipment by local lightning strikes and other electrical surges.

- To prevent overheating, do not block the fan on the rear panel or the ventilation holes located on the rear panel and bottom of the Controller.

⚠ **CAUTION:**
UNSECURED PHANTOMS MAY "WALK" DURING PLATFORM OPERATION RESULTING IN DAMAGE TO PHANTOM.

⚠ **CAUTION:**
MAXIMUM PLATFORM LOAD IS 70 LBS.

Model 008PL Specifications

Overall Dimensions:	71 x 35 x 28 cm
Overall Weight:	17.2 kg
Power:	110-250 VAC, 50/60 Hz
Platform Dimensions:	35 x 35 cm
Max. Platform Load:	32 kg (70 lbs)
Amplitude, IS:	± 25 mm
Amplitude, AP Surrogate:	±25 mm
Max. Surrogate Platform Load	5.4 kg (12 lbs.)
Motion Accuracy:	±0.1 mm
Cycle Time:	1 - ∞ (adjusted based on amplitude)
Editable built-in waveforms:	sin(t), 1-2cos4(t), 1-2cos6(t), sawtooth, sharkfin

CIRS Motion Control Software System Requirements

Windows XP® or later

Pentium 3® or equivalent

512 MB RAM

2 MB of available disk space

Ordering Information

INCLUDED WITH MODEL 008PL

Part No.	Qty	Component Description
008PL	1	Dynamic Platform
	1	Dynamic Motion Controller with firmware installed (110 - 220V, 50 - 60Hz)
	1	Actuator attached to platform
	1	3rd axis gating device (mounted to actuator)
	1	CIRS Motion Control Software USB
	1	Cable kit: USB 3.0 Gigabit Ethernet Adapter, Network cable CAT5e, 75', DB 25 male to male cable, DB 9 male to male cable, Power cord
	2	2 Amp fast acting fuses
	16	Platform pins
	1	User's guide
	1	Carry Case

OPTIONAL ITEMS

008A-125	Chest plate with reflective 11.5 mm tracker balls
008A-253	Cable CAT5E 150 Feet for Dynamic Phantoms (008A, 008M, 008PL)
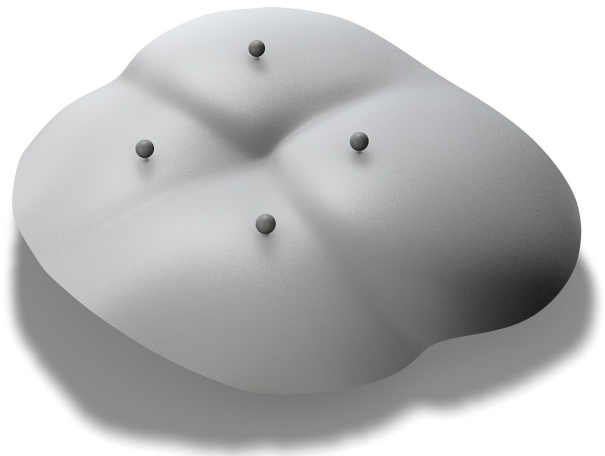
Optional chest plate for collecting chest motion and breathing data using an optical tracking system

Warranty

All standard CIRS products and accessories are warranted by CIRS against defects in material and workmanship for a period as specified below. During the warranty period, the manufacturer will repair or, at its option, replace, at no charge, a product containing such defect provided it is returned, transportation prepaid, to the manufacturer. Products repaired in warranty will be returned transportation prepaid.

Product	Warranty Period
Model 008PL- Dynamic Platform	24 Months

There are no warranties, expressed or implied, including without limitation any implied warranty of merchantability or fitness, which extend beyond the description on the face hereof. This expressed warranty excludes coverage of, and does not provide relief for, incidental or consequential damages of any kind or nature, including but not limited to loss of use, loss of sales or inconvenience. The exclusive remedy of the purchaser is limited to repair, recalibration, or replacement of the product at manufacturer's option.

This warranty does not apply if the product, as determined by the manufacturer, is defective because of normal wear, accident, misuse, or modification.

NON-WARRANTY SERVICE
If repairs or replacement not covered by this warranty are required, a repair estimate will be submitted for approval before proceeding with said repair or replacement.

RETURNS
If you are not satisfied with your purchase for any reason, please contact Customer Service or your local distributor prior to returning the product. Visit http://www.cirsinc.com/distributors/ to find your local distributor. Call 800-617-1177, email rma@cirsinc.com, or fax an RMA request form to 757-857-0523. CIRS staff will attempt to remedy the issue via phone or email as soon as possible. If unable to correct the problem, a return material authorization (RMA) number will be issued. Non-standard or "customized" products may not be returned for refund or exchange unless such product is deemed by CIRS not to comply with documented order specifications. You must return the product to CIRS within 30 calendar days of the issuance of the RMA. All returns should be packed in the original cases and or packaging and must include any accessories, manuals and documentation that shipped with the product. The RMA number must be clearly indicated on the outside of each returned package. CIRS recommends that you use a carrier that offers shipment tracking for all returns and insure the full value of your package so that you are completely protected if the shipment is lost or damaged in transit. If you choose not to use a carrier that offers tracking or insure the product, you will be responsible for any loss or damage to the product during shipping. CIRS will not be responsible for lost or damaged return shipments. Return freight and insurance is to be pre-paid.

With RMA number, items may be returned to:

> **CIRS**
> **Receiving**
> **900 Asbury Ave,**
> **Norfolk, Virginia, 23513 USA**

CIRS

**COMPUTERIZED IMAGING
REFERENCE SYSTEMS, INC.**
900 Asbury Ave
Norfolk, Virginia 23513 USA

Toll Free: 800.617.1177
Tel: 757.855.2765
Fax: 757.857.0523
Email admin@cirsinc.com

www.cirsinc.com

Technical Assistance
1.800.617.1177