



Installing CDR Hardware in CDR DICOM Systems

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Contents

1. CDR Hardware and CDR DICOM Software.....	1
1.1 About this Document.....	1
1.2 System Requirements	1
1.3 CDR Requirements for USB	2
1.4 Additional USB Cable Information.....	2
1.5 Single-User and Network Systems.....	2
1.6 Dedicated Server Network	3
1.7 Installing CDR Software	5
1.8 Connecting CDR 2000 Interface	5
1.9 Installing CDR 2000 Configuration File	6
1.10 Installing CDR Sensor Calibration File.....	8
1.11 Using the CDR Diagnostic Utility.....	9
1.12 CDR 2000 Interface Indicators.....	12

List of Figures

Figure 1. Example of Dedicated Server Network	3
Figure 2. CDR DICOM Software Welcome Screen	5
Figure 3. CDR 2000 Interface Configuration	5
Figure 4. Adding New Calibration Files in CDR DICOM	8

1. CDR Hardware and CDR DICOM Software

1.1 About this Document

This document is intended for first-time CDR users with CDR DICOM software. Users who have already set up CDR hardware in their practices do not need to reinstall their hardware. For them, this document can be used for reference, as needed. The principal difference between this document and "Installing the CDR System" (distributed with previous CDR User Guides) is the design of CDR DICOM software. If you are using CDR hardware already, continue with the "CDR DICOM Quick Start Guide" (also included in this binder) for an overview of CDR DICOM and software setup instructions.

1.2 System Requirements

First-time CDR users with CDR DICOM software should confirm that their client and server workstations satisfy the system requirements for CDR DICOM software. Your workstation information, which can be found in the Windows Control Panel under the System icon, must meet the requirements found in the "CDR DICOM Quick Start Guide."



Check here to verify that your system is running Windows 2000 / XP (recommended).

Check here to verify that your system has 64 MB of RAM (minimum).



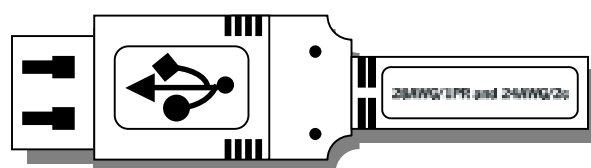
Verify that your system is using a supported USB Controller. Check our website at www.schicktech.com for a current listing.

1.3 CDR Requirements for USB

- PC desktop or notebook with USB port
- USB cable
- CDR software version 1.8.4b or higher
- CDR Remote Module (*also called the CDR 2000 Interface*)
- CDR Wired Sensor

1.4 Additional USB Cable Information

To work with CDR, the USB cable must have a “/2c” designation. The “/2c” designation is the USB spec designation for power connectors inside the cable. If the “/2c” designation is missing, a new USB cable is needed.



TO FIND THE GAUGE OF THE CABLE, LOOK AT EITHER CABLE END, CLOSE TO THE CONNECTOR

If a new cable is needed, refer to the following list.

LENGTH OF CABLE	PROPER GAUGE FOR CDR USB CABLES
0.81 meters (18 inches)	28AWG/1PR and 28AWG/2c
1.31 meters (4 feet)	28AWG/1PR and 26AWG/2c
2.08 meters (6.6 feet)	28AWG/1PR and 24AWG/2c
3.33 meters (10 feet)	28AWG/1PR and 22AWG/2c
5.00 meters (19 feet)	28AWG/1PR and 20AWG/2c

1.5 Single-User and Network Systems

CDR DICOM systems are set up in one of the following configurations:

- A single workstation running CDR DICOM single-user software (Standalone)
- Networks with multiple workstations running CDR DICOM multi-user software (Client / Server)

PLEASE NOTE: When configuring your network for CDR DICOM software, we strongly recommend the use of dedicated servers. Dedicated servers are workstations that store images only; they do not acquire images nor are they used to view them.

1.6 Dedicated Server Network

The following illustration is an example of a dedicated server network.

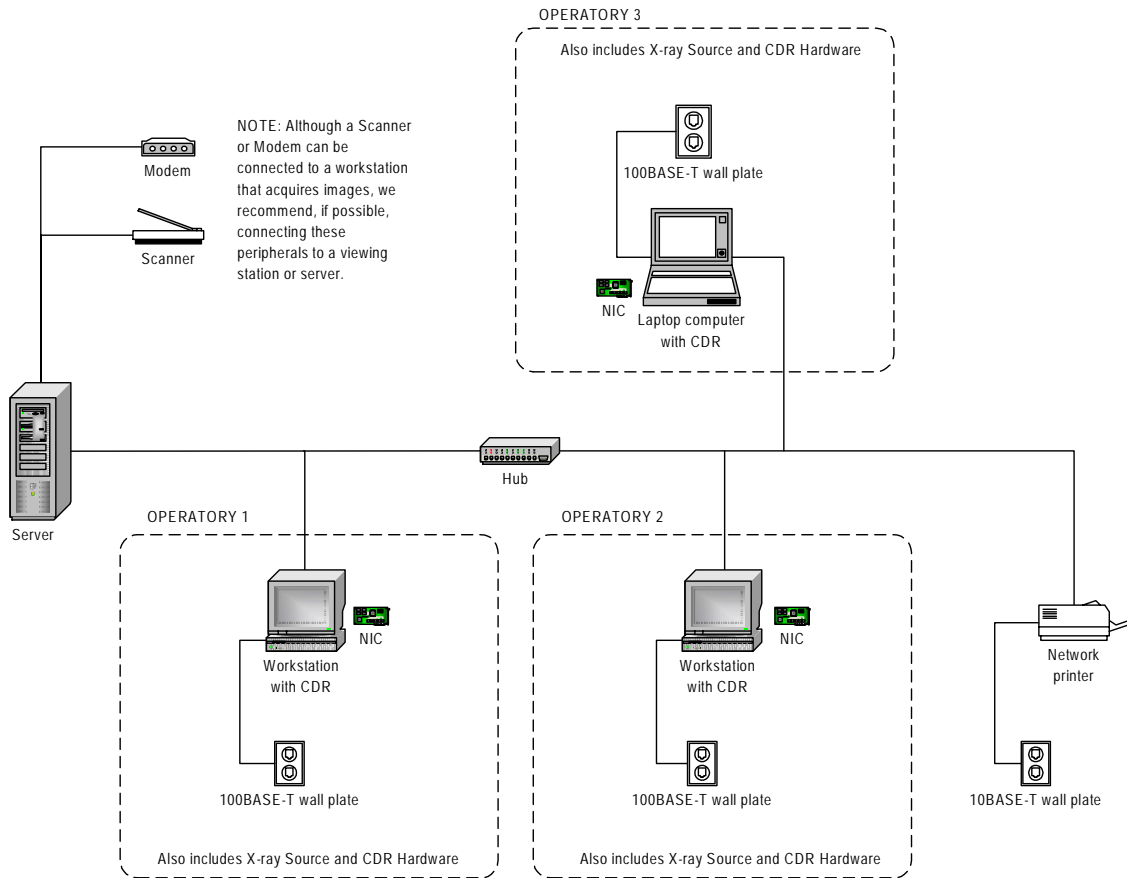


Figure 1. Example of Dedicated Server Network

INSTALLING CDR 2000 (USB) System

Install CDR software.

(Paragraph 1.7)

Connect the CDR 2000
Interface and CDR
Sensor.

(Paragraph 1.8)

Install the CDR 2000
Configuration file, if
necessary.

(Paragraph 1.9)

Install the Sensor
Calibration File.

(Paragraph 1.10)

Verify CDR hardware is
functioning normally.

*(Paragraphs 1.11 and
1.12)*

1.7 Installing CDR Software

Before installing CDR DICOM software, refer to the "CDR DICOM Quick Start Guide" document found in this binder. The Quick Start Guide provides an overview of CDR DICOM software and can help you during the software installation process. When you receive your CDR DICOM software CD, insert the disc into your workstation's CD drive, and follow the on-screen directions to install the CDR DICOM program. (A screenshot of the CDR DICOM Welcome screen is provided below.) When installing CDR DICOM networks, always install the server first.



Figure 2. CDR DICOM Software Welcome Screen

1.8 Connecting CDR 2000 Interface

NOTE: See Figure 3, below, for reference.

1. Connect the CDR Sensor to the CDR 2000 Interface.
2. Connect the USB cable to the USB connector on the CDR 2000 Interface.
3. Connect the USB cable to a free USB port on desktop or laptop system, and then continue with **paragraph 1.9** .



Figure 3. CDR 2000 Interface Configuration

1.9 Installing CDR 2000 Configuration File

If you are installing the CDR 2000 System for the first time, you will need to follow the steps below to install the configuration file for your CDR 2000 System. Otherwise, skip ahead to **paragraph 1.10** .

STEP 1

- A. When the computer restarts after the CDR program is installed, the Windows Hardware Wizard will detect the CDR 2000 Interface as an Unknown Device.
- B. Re-insert the CDR DICOM for Windows CD.



STEP 2

- A. Click on the recommended option, Search for the best drives for your device.
- B. Click **Next**.



STEP 3

- A. Verify that the *CD-ROM drives* check box is checked.
- B. Verify that the *Specify a location* check box is checked. Browse the CD using the scroll arrow until you find the CDR2000.INF file.



C. For example, if “D” is the drive letter of your CD-ROM drive, you would browse for: *D:\DRIVERS\CDR2000(USB)*

D. Click **Next**.

STEP 4

A. Verify the name and location of the device driver: *D:\DRIVERS\CDR2000(USB)\CDR2000.INF*

B. Click **Next**.



STEP 5

A. When the file has been installed, click **Finish**.

B. Continue with **paragraph 1.10**



1.10 Installing CDR Sensor Calibration File

Provided with every CDR Sensor is a disk containing the Sensor calibration file. This file helps to ensure the images acquired and displayed by the CDR system are consistently high quality. The disk has the Sensor's serial number stamped on the label.

Each calibration file is unique to the Sensor it was shipped with and the file must be installed on every computer using that Sensor. To install the calibration file for the currently connected Sensor, perform the following steps.

1. Ensure the connection from the CDR Sensor to the CDR 2000 Interface and the USB cable connection between the CDR 2000 Interface and the desktop or laptop system is secure.
2. Insert the calibration file disk. Make sure the file name on the disk is the same as the serial number of the Sensor.
3. Start CDR DICOM for Windows. Click **System > Options > Acquisition Modules > X-ray Properties** and then on the Calibration tab. Click on the **Install New** button. Click **OK** when finished. Click OK to close the CDR Options dialog box.
4. Remove the disk after the file is copied.

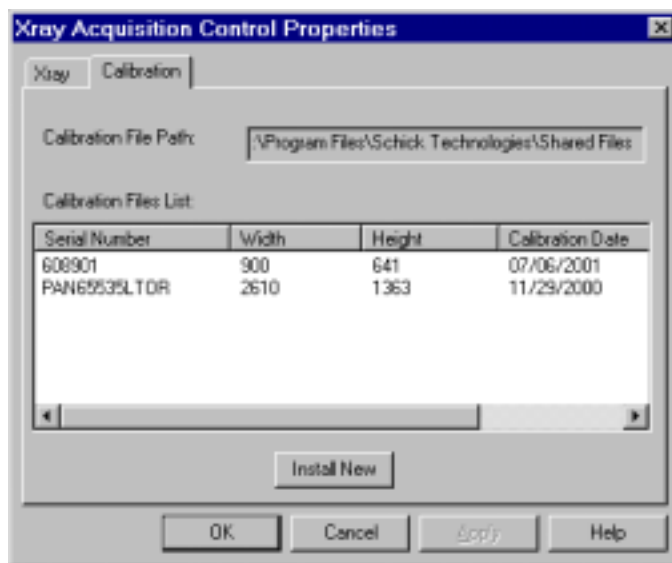


Figure 4. Adding New Calibration Files in CDR DICOM

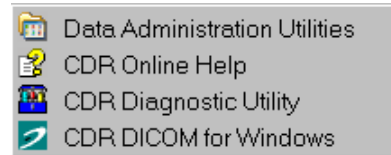
1.11 Using the CDR Diagnostic Utility

One of the best ways to check the status of your CDR hardware is to use the CDR Diagnostic Utility. This tool, which is listed with other program items in CDR DICOM for Windows, checks files and settings that are critical for CDR's operation. By running the Diagnostic Utility with your CDR hardware connected, you have an accurate snapshot of your CDR system's status, including the presence of the appropriate calibration file for the connected sensor and the right firmware for the connected Remote Module. Color checkmarks next to each verified item provide clear visual cues about whether a particular item is configured /operating normally.

The following procedure illustrates how the CDR Diagnostic Utility is used to detect and correct a problem with the firmware version inside the Remote Module.

STEP 1

- A. Please be sure that CDR DICOM software is installed before performing this procedure.
- B. Turn on the computer and wait for the Windows desktop to display.
- C. Click on **Start** menu, then **Programs, CDR DICOM for Windows,** and then the **CDR Diagnostic Utility.**



STEP 2

Click **Check CDR USB System.**



STEP 3

- A. The Diagnostic Utility consists of several information screens. The screen you need to reprogram your remote is entitled Remote/Sensor.
- B. Click **Next** until the Remote/Sensor screen is displayed.



STEP 4

- A. On the Remote/Sensor screen is a row of buttons and a series of checkmarked items.
- B. If all of the checkmarks are green, your Remote Module already has the latest firmware and does not need to be reprogrammed. You can stop here and skip the remaining steps in this procedure.



(Green Checkmark next to Firmware Revision – Remote OK)

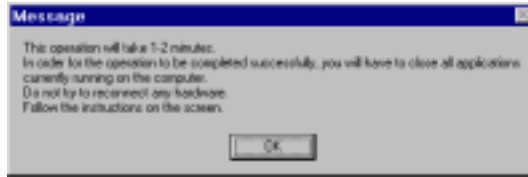
- C. If a yellow or red checkmark appears next to the Firmware Revision item, you will need to reprogram the remote.
- D. Click the **Program Remote** button.



(Red Checkmark next to Firmware Revision – Upgrade the Remote)

STEP 5

A dialog box appears with information about the update operation. Click **OK** to continue.



STEP 6

During the upgrade operation a progress bar is displayed and updated.



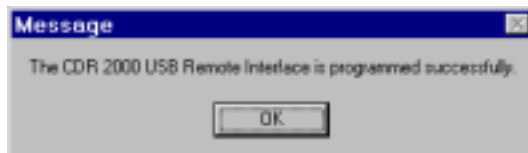
STEP 7

If prompted, disconnect the USB cable from the CDR 2000 Interface for a moment and then reconnect it. Click **OK**.




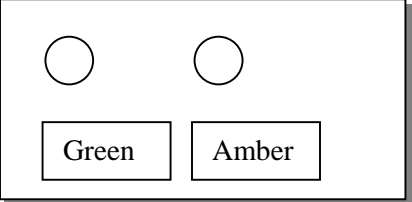
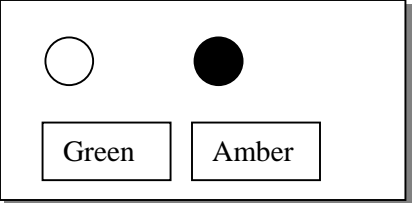
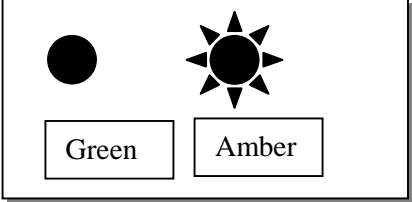
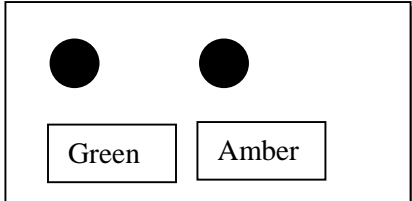
STEP 8

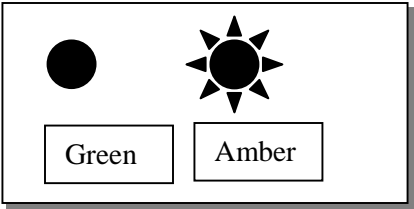
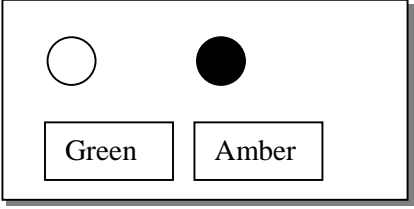
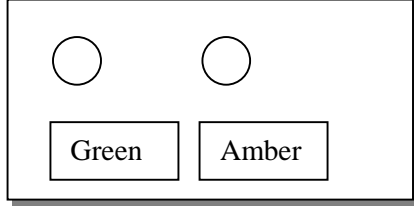
- A. After a successful update, click **OK** to close the message and return to the Remote/Sensor screen. (Also note a green checkmark next to Firmware Revision.)
- B. Click **Next** for a summary of information collected by the Diagnostic Utility.
- C. Click **Finish**.



1.12 CDR 2000 Interface Indicators

The CDR 2000 Interface uses two LED indicators (green and amber) for reporting its functional status. A description of these indicators is provided below.

INDICATORS	STATUS
	
Indications when CDR is not Running	
	<p>GREEN OFF AMBER OFF</p> <p>Sensor connected, normal status, or USB cable not connected.</p>
	<p>GREEN OFF AMBER ON</p> <p>Sensor not connected or not detected.</p>
Indications when Taking X-rays	
	<p>GREEN ON AMBER blinks once every second</p> <p>Sensor connected, normal status</p>
	<p>GREEN ON AMBER steady ON</p> <p>Target frame in CDR main window clicked. Sensor in acquisition mode.* Activate X-ray source.</p> <hr style="width: 10%; margin-left: 0;"/> <p>* Whenever CDR is in AutoTake™ mode, both Green and Amber LEDs remain steady ON until the X-ray source is activated.</p>

INDICATORS	STATUS
○ OFF ● ON ☀ BLINKING	
	<p>GREEN ON AMBER blinks RAPIDLY</p> <p>Image being transmitted.*</p> <hr/> <p>If Sensor times out waiting for X-ray to be detected, LEDs return to normal indications:</p> <p>Green ON Amber Blinking Slowly <i>(Manual acquire mode)</i></p> <p>Green ON Amber ON <i>(AutoTake™ mode)</i></p>
Indications when Changing Sensors	
	<p>GREEN OFF AMBER ON</p> <p>Sensor not connected or not detected.</p>
	<p>Sensor connected, normal status, or USB cable not connected.</p>