User Release Notes

for

Kodak Quality Control Software

Version 3.0

July 10, 2008

***Kodak* Quality Control Software Version 3.0 Release Notes**

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Use of Manual

The *Kodak* CR Point-of-Care System is designed to meet international safety and performance standards. Personnel operating the unit must have a thorough understanding of the proper operation of the system. This manual has been prepared to aid medical and technical personnel to understand and operate the system. Do not operate the system before reading this manual and gaining a clear understanding of the operation of the system. If any part of this manual is not clear, please contact your Carestream Health representative for clarification.

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Section 1: Overview

Scope and Purpose

The purpose of this document is to describe the contents of the *Kodak* QC application version 3.0.0.0, limitations and special instructions, if needed, and known issues.

General

The *Kodak* QC Version 3.0.0.0 is applicable for the following CR scanners:

- *Kodak* Point-of-Care CR 120/140
- *Kodak* Point-of-Care CR 260
- *Kodak* Point-of-Care CR 360

Main Features

- Scans images from Point-of-Care CR scanners.
- Receives DICOM Modality Work List from RIS (Purchasable option).
- Allows manual entering of patient demographics (when no DICOM-MWL is available).
- Allows performing QC to the image/s, such as Window/Level, rotate, text annotations, L&R markers and arrows.
- Enhanced viewer to allow operations such as measurements, additional annotations and print layouts.
- Saves and sends images in DICOM format.
- DICOM Print.
- CD/DVD burn (Purchasable option).
- TQT (Purchasable option).
- Support for the following languages:
  - English
  - German
  - French
  - Japanese
  - Spanish (International)
  - Italian
  - Norwegian
  - Portuguese (Brazil)
  - Russian
  - Turkish
  - Swedish
  - Finnish
  - Chinese (Simplified)

Section 2: Environment Description

PC Minimal Requirements

Operating System

Microsoft Windows XP SP3 or *Windows* Vista Business SP1

PC Hardware

CPU	2.8 GHz Pentium 4
Memory	1 GB RAM
Disk Size	80 GB
Disk Space for images folder	40 GB
CD/DVD RW	Brands supported by *Windows* and *Nero* Applications
Monitor resolutions supported	1280 x 1024, 1024 x 768
Touch screen	Optional

See more information regarding the Hardware configuration in *Kodak* Point-of-Care CR 120/140/260/360 System Software Installation Version 3.0.

CR Configuration

Configuration of PoC 120/140

USB/FPGA	**4.9.1.64**
Firmware	**4.2.1.71**
Motion	**1.19**
Driver	**1.0.0.0** (no changes)

Configuration of PoC 260

USB/FPGA	**6.3.1.19**
Firmware	**6.2.1.38**
Motion	**1.01**
Driver	**1.0.0.0** (no changes)

Configuration of PoC 360

USB/FPGA	**9.3.1.00-21**
Firmware	**9.2.1.00-26**
NIOS	**9.3.1.00-21**
Driver	**1.0.0.0** (no changes)

Section 3: Software Version 3.0 Description

Introduction

Kodak QC 3.0 is a new software version created mainly to operate the PoC 360 scanner. The Software can operate both with the new PoC 360 scanner and the current PoC 140/260 scanners.

Kodak QC 3.0 has new advantages in imaging processing, new features to the end user, system calibration and serviceability.

Installation Instructions

Install the Software according to the *Kodak* Point-of-Care CR 120/140/260/360 Systems Software Installation, Version 3.0.

New Features

Support for New PoC 360 Scanner

Specific support for the new Point-of-Care CR 360 includes the following related features:

TQT (Purchasable option for PoC 360)

The Total Quality Tool for *Kodak* Point-of-Care Systems evaluates various aspects of image quality on Point-of-Care CR Systems. Following the procedures, the user can verify that the system is functioning within its normal operating specifications.

The TQT was developed to be implemented on Point-of-Care CR systems, using a calculation core that is used in Direct-View systems. Specific sub-tests and conditions are included in the current version. TQT can be used by service engineers and by users for periodic QA and QC testing.

OCPC - Optical Collector Profile Compensator

Every optical collector has its own unique profile (signature) along the scan line. This profile is due to lack of full symmetry along the scan line. The Optical Collector Profile Compensator (OCPC) was developed to reduce the large-scale non-uniformities in the image.

Linear to Log Transform

Linear Log transformation is applied after framing and OCPC operations on 16-bit raw data images. This transformation maps the image from 16-bit linear space to 12-bit logarithmic space.

Support for all PoC Scanners

Automatic Origin Calibration

A new algorithm was developed to detect the start-of-scan of the system. This is the first calibration process that is conducted. It determines the X and Y values that correspond to the system under test.

Image Framing

Each CR scanning has uncertainty of the screen location within the drum. This uncertainty is covered by over-scan margins of 2-mm frame around the screen physical size.

A framing function was developed to remove these white over-scan bands. In this function a fixed matrix, with smaller dimensions than the screen dimensions, is used. With imaging algorithm the frame is best-fitted to the actual scanned matrix size. Then the image is cut to this size. This provides image with clean frame.

DICOM and Modality Worklist related changes:

- Additional Modality Worklist search criteria parameters.
- Additional "Study Description" field in Modality Worklist and Patient screens.
- Patient lists can now be sorted by shown columns and by incoming order.
- Column sizes are now configurable.

GUI new options and changes:

- Settings tabs
    - Added ability to reboot PoC 360 scanner from the software.
- Single and Multi Exposure control.
- Print Fit-to-Size or True Size from scan screen.
- Procedure Mapping
    - Procedures can now contain more than one instance of the same Sub-organ.
- Logged-on user's details displayed on the scan screen.
- Viewer
    - Remove screen layouts toggle buttons to allow a fixed screen layout.
    - Screen layouts parts are no longer re sizable.

Support for *Windows* Vista Business + SP1

Multi Language Support

Additional Languages

In addition to the supported languages in Version 2.5, this version also supports the following languages:

- Swedish
- Finnish

Additional Translations

Translations added to Sub-organ names in scan screen and Anatomical tab for all supported languages. The drop down list shown is now sorted by name.

New *Kodak* Image Processing "Looks" added

- New "Standard" look for softer images. This look is configured as the Default Look.
- For PoC 120/140/260 - both "Standard" and "Traditional" Looks were added.

> **Note**

For new looks to be available after software upgrades from former versions, scanner settings should be restored to Factory Default.

Resolved Defects from the Previous Version

List of resolved defects found in former versions:

Generic

2772	Scan fails if not enough disk space is available
	Black Surround may cause bad segmentation of the processed image.
2530	During calibration, turning the scanner ON and OFF may cause the application to crash.
2703	User tab - The "Do you want to save your changes" message doesn't appear for some changes.

Image Storage

2794	Performing Re-Process sets the "sensitivity" DICOM values of an image to 0.(0018.6000).

Viewer

2270	Burn window may open without any files in it if no patient was selected.
2807	*Kodak* printer's calibration wizard isn't applied for Scan screen printouts.
2733	Launching a burned CD/DVD doesn't open all images automatically.
	Date format for the Image Annotations in the Viewer can't be modified.

Limitations and Known Issues

Number	Summary	Workaround
2398	Connecting Z-Cart scanner to computer in which the Scanner Position is Table Top causes the Z-Cart scanner to operate as Table Top scanner and will cause damage to the cassette.	Prevent changing Table Top to Z-Cart without modifying the settings for it properly.
	Grid Pattern Suppression supports 103 LPI only.	Other grid types can be used, but with less pattern-removal efficiency.
3173	Installation process fails if non-English characters are used for *Kodak* QC path.	Use current default path for installation or use English folder names only.
3224	Image W/L values are saved as pixel value if Save As operation is performed in the Viewer application.	Re-process reverts the image to its original W/L state.
	During Calibration lines appear on the scanned screen.	The lines can be ignored: they have no affect on calibration process and will not appear during real scans.
2458	Application might slow down during reprocess of high resolution scans.	
3687	LLI cassette without barcode cannot be erased manually with LLI sub-organ.	Select 14 x 17 in. cassette and erase each side manually.
3087	Changes in Anatomical tab Anatoms table may not take place in certain scenarios.	When changing a field in the Anatom table, make sure to move the focus from the modified field once the changes were made - verify that the changes appear as they should in the table.
3543	Values of Date of Birth or Gender may show differently in Database than in the DICOM header of the processed images when a patient is entered more than once in New Patient screen with different values of Gender or Date of Birth than the former scan.	Date of Birth and Gender should be filled out correctly with proper values. If desired. modify on PACS (data will show up correctly on QC database).
2483	During E-Gain calibration, sometimes the cassette does not auto-erase.	After each Gain calibration erase the cassette manually to make sure it has been fully erased.

Section 4: Publication History

Publication Date	Publication No.	ECO No.	Changed Pages	File Name	Notes
10-July-08	8G1181	C00388		8G1181_KodakQCSoftwareVersion_3.0_Release_Notes	New Publication