

APEX™ Software



Customer Release Notes

MAN-09003 Revision 001

HOLOGIC®

QDR APEX™

Operating System for the QDR Densitometers

Customer Release Notes

For Software Version 4.6.0.8

Part Number MAN-09003

Revision 001

January 2022

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QDR APEX™ 4.6.0.8 Release Notes

APEX is the operating system for the QDR densitometers. APEX 4.6.0.8 runs on the Windows® 7 operating system. APEX 3.5 and previous releases run on the Windows XP operating system. For differences in results from previous versions of APEX, refer to *APEX V4.6 Statement of Equivalency* (MAN-04531).

1.1 Version 4.6.0.8

APEX Version 4.6.0.8 contains all the features of APEX Version 4.6.0.3.

The following issues have been resolved:

- Incorrect Ay Motion: Table rising prior to C-Arm being at the head position when performing IVA scans.
- Incorrect 10-year Fracture Risk (FRAX®) scores

1.2 Version 4.6.0.3

APEX Version 4.6.0.3 contains all the features of APEX Version 4.6.0.2 Rev 002 along with the following resolved:

- DICOM Language option corrections
- Corrected problem resulting in 'unable to find record' when analyzing legacy scan. Scans will need to be restored to be corrected
- Correct abort when Auto-WB analysis fails

1.3 Version 4.6.0.2 Rev 002

APEX Version 4.6.0.2 Rev 002 contains all the features of APEX Version 4.6.0.2 Rev 001.

- New Pediatric reporting for hip, spine and whole body exams. Allows for the configuration of these reports via the Reporting tab under the System Configuration utility.

1.4 Version 4.6.0.2 Rev 001

APEX Version 4.6.0.2 Rev 001 contains all the features of APEX Version 4.5.3.

The following new features have been added:

- Patient database converted from Access to SQL. Improves the speed of APEX when displaying lists of patients or scans.
- Database synchronization option
- Updated reference database for Caucasian and Black children with 2012 BMDCS data.
- Hologic Connect has been added to allow for remote service and support for those sites who have internet connection and sign up for the service.

In addition the following have been resolved:

- Extraneous database messages are no longer saved in the log.
- The Call Back List report now handles large databases.
- Detail Worklist query not functioning.
- Local motion active message at startup on system running at 50 Hertz.
- DICOM Send rate of change reports generating message 'Attempt to scroll past end or beginning of data'.
- Abort analyzing IVA scans on Japanese Windows 7.
- Reference curve source can be listed as 2012 BMDCS instead of 2012 BMDS/NHANES.
- Unable to import database with blank referring physician.
- Unable to import only QC data.
- Graph for whole Body report for patient less than 20 correctly labeled as 'Age vs. Sub Total'.
- Image for compare scan not displayed on the scan positioning screen.
- If the DICOM Queue is suspended when a scan is performed it does not restart until APEX is restarted.
- Reports not properly configured upon install.
- Increased system stability and performance to mediate 'Device not ready for requested action' or prolonged unresponsiveness of APEX
- Corrected issues with DICOM filtered Query/Retrieve and disabling of MPPS

1.5 Version 4.5.3

APEX Version 4.5.3 contains all the features of APEX Version 4.5.2.1 and includes the following new features:

- APEX reports T-score based on configurable ethnicity and gender in accordance with ISCD guidelines
- APEX report configurable to report L2-L4 in accordance with JSBMR 2012 guidelines
- BCA clinical report configurable to report weight in lbs.
- DICOM character set configurable

1.6 Version 4.5.2.1

APEX Version 4.5.2.1 contains all the features of APEX Version 4.5.2 and includes the following new features:

- Subscripts removed from DICOM SR

1.7 Version 4.5.2

APEX Version 4.5.2 contains all the features of APEX Version 4.5.1 and includes the following new features:

- Updated Infant Whole Body algorithm

1.8 Version 4.5.1

APEX Version 4.5.1 contains all the features of APEX Version 4.5 and includes the following new features:

- HP Whole Body added to database export
- Export of QC data enhanced
- The adjusted LSC values displayed under the rate of change table
- DICOM modified to not mark spine scan as archived with extended spine report
- SOP Instance UID for the DICOM SR modified to be different from DICOM Send
- Added fields to DICOM SR, including reference curve source, analysis method, height, weight, and ethnicity
- Performed Series Sequence added to DICOM MPPS message
- Checking added to ensure proper dual hip positioning
- Computer power setting adjusted during scanning to prevent computer from going into sleep mode during scans.

1.9 Version 4.5

APEX Version 4.5 contains all the capabilities of APEX Version 4.02 and includes the following new features:

- Export of QC data enhanced

1.10 Version 4.0.2

APEX Version 4.0.2 contains all the features of APEX Version 4.0.1 and includes the following new features:

- Can read CDs created by InCD.
- Added reference curve source to DICOM SR.
- Added Analysis Method to DICOM SR.

1.11 Version 4.0.1

APEX Version 4.0.1 contains all the features of APEX Version 4.0 and includes the following new features:

- Improved database performance.
- Height, weight, and ethnicity included in DICOM structured reporting (SR).

1.12 Version 4.0

APEX Version 4.0 contains all the features of APEX Version 3.4 and includes the following new features:

- Runs on the Windows 7 operating system.
- Visceral Fat results are added to the Advanced Body Composition Report.

1.13 Version 3.4

APEX Version 3.4 contains all the features of APEX Version 3.3.0.1 and APEX Version 3.3 and includes the following new features:

- DICOM SR (Structured Reporting) is included with the DICOM Option.
- IVA Analysis with MXApro includes workflow improvement and point placement.
- Regions for whole body analysis are placed by the software for the user to check and adjust as necessary.
- A Report configuration option that indicates that the BMD change of serial scans with differing scan modes or analysis methods exceeds the 95% confidence level (LSC). The configuration also includes a parameter for adjusting the baseline LSC for these cases. By default this feature is disabled.
- Report supports Whole Body Subtotal BMD (excluding head) for patient age under 20.
- For Whole Body scans NHANES reference data is available for the 'Non NHANES calibration,' which produces lower %fat and matches the body composition calibration that was standard prior to APEX.
- %fat reference curves for right and left arm, right and left leg, trunk and Subtotal are included.
- The APEX reference data is extended to support Z-scores for White subjects greater than 85 years old. NHANES White Whole Body BMD versus age reference data is extended down to age 3 using the Hologic Pediatric reference data for ages 3-6 and the BMDCS reference data at age 7.
- Global ROI from compare scans is positioned based on matching the bone maps of the two scans.
- The scan mode defaults to the selected patient's most recent scan of the same body part such as AP Spine.
- DXApro Analysis is configurable to compare to baseline, most recent scan, or to not automatically select a comparison. The default comparison setting is the most recent scan.
- FRAX is updated to version 3.5.
- The Locate function can search subdirectories.
- Do Not Delete most recent scan option is added to the Delete Scans After Archiving configuration option screen.

- Reports display Least Significant Change (LSC) values rounded to 3 decimal places.
- Referring physician's text box includes a scrolling dropdown list of entered physician names. You can also begin typing and matching names are displayed.

1.14 Version 3.3.0.1

APEX Version 3.3.0.1 contains all the features of APEX Version 3.3 and improves error logging at the completion of the scanning process.

1.15 Version 3.3

APEX Version 3.3 contains all the features of APEX Version 3.2 and includes the following new features:

- Added NHANES whole body bone and body composition reference data for adults and children.
- Added color whole body images to the body composition Advanced Clinical and Rate of Change reports.

Previous APEX versions provided support for the following features:

1.16 Version 3.2

APEX Version 3.2 contains all the features of APEX Version 3.1.2 and includes the following new features:

- Removed FRAX countries list from the base product and made the list available as a standard option.
- Converted SFPlot to Windows operating system.
- Added function to detect the installation of a SCSI device and to warn users to disable scanning if the SCSI device is powered on.
- Converted APEX Service Utilities to Windows operating system.
- Added support for aperture plate revision.
- Increased Referring Physician name maximum character limit in Worklist to match the DICOM standard for the Referring Physician tag.
- Enhanced Import/Export for use with Database Synchronizer.

1.17 Version 3.1

APEX Version 3.1 contains all the features of APEX Version 3.0.1 and includes the following new features:

- Updated FRAX (based on FRAX V 3.0) with additional countries available.
- Ability to configure FRAX to conform to either NOF/ISCD or IOF guidelines.
- Ability to add rulers to a whole body scan (allows measurement of patient anatomy).
- Support for body composition rate of change reports for whole body scans.
- Ability to automatically generate an accession number for DICOM transfers.
- Ability to populate the study description field in DICOM files if the study is not a worklist study (or if it is a worklist study but the field is not mapped to any worklist attribute).
- Ability to configure Query/Retrieve to locate by study or series.
- Supports AP Spine analysis down to age zero. For children age three and under, it is imperative that the correct date of birth be entered by the operator. Refer to *QDR Reference Manual* for further details.
- Image Pro now included as a standard feature.
- Ability to limit Whole Body scan length.
- The dose module is now included for MPPS.
- Dose is now included in the DICOM file (in the header).



Note

Physician's Viewer Version 6.2 or higher is required for DICOM files generated by APEX Version 3.1.

1.18 Version 3.0.1

APEX Version 3.0.1 contains all the features of APEX Version 3.0 and includes the following correction:

- A change to the scanner driver to prevent potential artifacts in the image during acquisition.

1.19 Version 3.0

APEX Version 3.0 contains all the features of APEX Version 2.3 and provides the following new features:

- 10-year Fracture Risk using FRAX the World Health Organization (WHO) Fracture Risk Assessment tool (not available in the US).
- Calculation and display of Android and Gynoid subregions
- Ability to rotate sub-regions
- Ability to reflect data for limbs when there are large differences between right and left limb
- Body Composition is now a standard part of the software on scanners with whole body capabilities.
- RTX drivers have been replaced with Windows XP drivers.
- Additional error logging
- Improved error handling



Note

Physician's Viewer Version 6.1, or higher, is required for DICOM files generated by APEX Version 3.0.

1.20 Version 2.3

APEX Version 2.3 contains all the features of APEX Version 2.2 and provides the following new features:

- Worklist mapping of study description
- Improved performance of the restore feature

1.21 Version 2.2

APEX Version 2.2 contains all the features of APEX Version 2.1 and provides the following new features:

- Color reference graphs in DICOM reports
- IVA markers, labels and assessment can now be stored in the DICOM Grayscale Softcopy Presentation State files
- Hologic reference curves for children are updated with the Bone Mineral Density Childhood Study data
- Analysis method on those less than age 20 is changed for the AP Spine and Hip to match the analysis used in the Bone Mineral Density Childhood Study (for more details, refer to *Statement of Equivalency for APEX 2.2*)

1.22 Version 2.1

APEX Version 2.1 contains all the features of APEX Version 2.0 and provides support for the redesigned Hologic DXA Quality Control Phantom.

1.23 Version 2.0

APEX Version 2.0 contains the following new features:

- AccuView automatic hip positioning as well as changes to the analysis protocols for improved precision.
- The optional Hip Structure Analysis (HSA®) software provides geometric measurements of the femur.
- Body Mass Index (BMI) is calculated after entering the patient's height and weight.
- A new lean NHANES BCA analysis method is available for body composition measurements.
- The software is now multi-byte compliant allowing wide character languages such as Kanji to be used.
- The PatScan database layout has been modified and the format updated to Microsoft Access 2000.
- Options for the software will no longer be installed from a CD or floppy, but will use a license key provided by Hologic. This allows options to be used for a trial period.
- The IVA disclaimer 'For Vertebral Deformity Evaluation Only' is removed due to FDA approval of Abdominal Aortic Calcification assessment.
- DICOM is modified so each DICOM Send destination is completely configurable and has a link to a Query/Retrieve provider. There are also separate configurations for worklist provider and perform procedure step provider.
- DICOM Reports now include support for Rate of Change in absolute BMD and the new Extended Spine report.
- Modality Worklist now allows patient data to be edited at the time of scanning.
- Baseline scan management and display is now available for IVA images.
- The Reference Curve Editor can now create curves using any database entry.
- Reference curves created by the CDC for age, height and weight and reporting of data in percentiles when using these curves were added.

Previous version QDR for Windows XP V12.6 provided support for the following features:

A potential problem is resolved for users who currently run the IRIS Enterprise software, and have configured the system to archive to a DICOM Send node and then automatically delete the scans. With Version 12.5, there is a chance that data will be lost if the DICOM Send fails. Although the chance of this happening is extremely small, the problem is resolved in Version 12.6.



Note

Users upgrading from V12.5 who currently run the IRIS Enterprise software must run the DICOM Recover Utility before upgrading to Version 12.6.

Previous version V12.5 provided support for the following features:



Note

QDR for Windows XP Version 12.5 requires that Physician's Viewer be at Version 5.2.

- DICOM Send configurable to Save P and R files to PACS
- Query/Retrieve from PACS
- Local Ping, Remote Ping and C-Echo for all DICOM Send, Query/Retrieve and Worklist destinations
- ISCD compatible reports with new ISCD and Pediatric reference curves built in.
- Extended Hip Rate of Change Reports
- DICOM reports to support Sub-regions for Whole Body analyses
- Hip Axis Length reported on Hip scans
- Color Fracture Risk graphs
- Addition of baseline scan during follow up scans
- Baseline scan flagged and configurable to keep on the system
- CAD_{BMD} tips to aid in analysis
- Audit logging of user access to patient information
- Worklist for Electronic Medical Reporting (EMR) – obtains patient list from a designated file provided by EMR.
- BCA calibration without the step phantom
- Physician's Viewer has a new default template for ISCD compatibility
- DxReport now supplies canned text for ISCD compatibility.

Previous version V12.4 provided support for the following features:

- Instant Vertebral Assessment High Definition (IVA HD) now available on Discovery A, SL, W and C models.
- Instant Vertebral Assessment (IVA) now optional on Discovery Wi and Ci models.
- Ability to configure image processing of AP Spine and Hip BMD examinations to Legacy, Classic or Discovery.

Previous version V12.3 provided support for the following features:

- History Questionnaire Option provides ability to electronically enter and save bone density related patient information
- T-scores are not reported for persons under 20 years (configurable for any age) which complies with ISCD guidelines.
- Questionnaire Designer Option provides ability to create and deploy a customized questionnaire
- Destination Name field added to DICOM file
- Interpreting Physician field added to DICOM file

Previous versions (V12.1 and V12.2) provided support for the following features:

- Live Data Conversion
- ROC on spines with unequal regions
- Auto Whole Body analysis
- Start up in Windows (previously DOS)
- HIPAA Privacy tools
- ROI on DICOM
- Rebuild ALR Index
- Callback list
- T and Z scores on analysis screens
- The ability to configure the user interface to display in French, Italian, German, Spanish or English
- Database Export Filtering
- IHE Year 4/5 Exception Case Handling

Please refer to the *Discovery Operator's Manual*, *Explorer Operator's Manual*, or *QDR Reference Manual* for operating instructions related to new features.