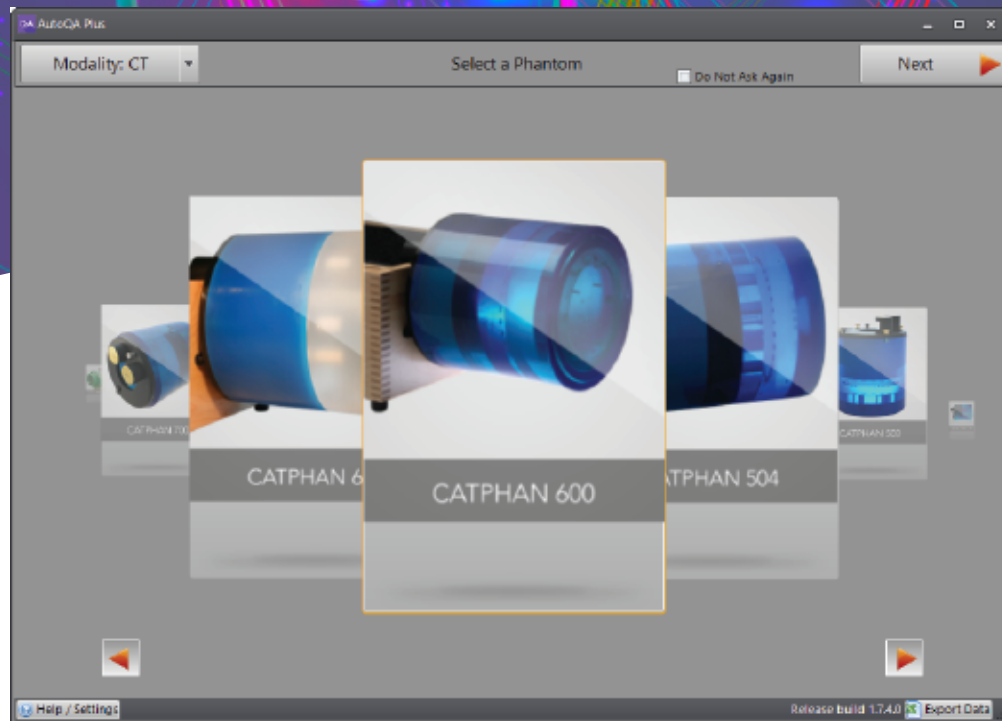# AutoQA Plus CT Catphan®

AutoQA Plus CT Catphan® Features

- Instant trend analysis using our 'Trend Report Links'
- Designed for simple and intuitive navigation
- Pass/Fail performance evaluation
- User created 'Report Profiles' to control Pass/Fail limits, output of images, overlays and graphs
- Reports available in HTML and PDF formats
- Support local date and number formats
- Multiple language support
- Self-service mode for offline license activation
- Export Database in Excel format
- Supports compressed and enhanced DICOM images

AutoQA Plus CT Catphan®
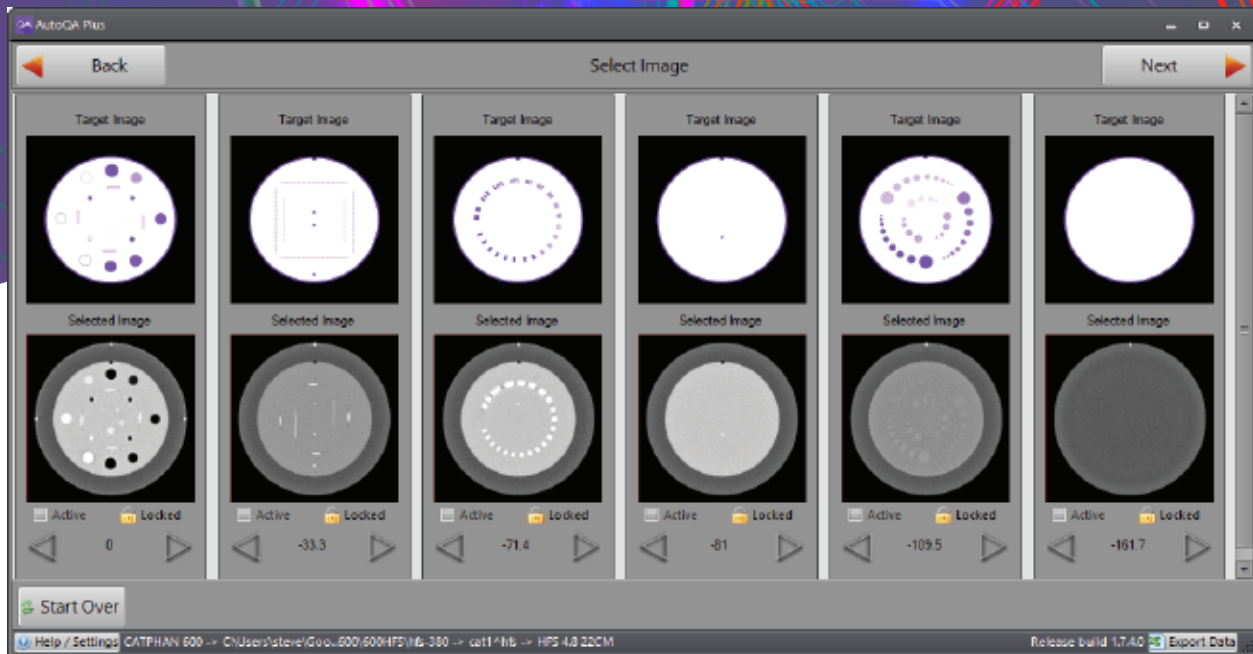
CT Number Trend Analysis

Supports the following system Image Quality performance measurements

- Pixel size/ Spatial Linearity
- CT number accuracy
- Slice thickness accuracy
- Laser Alignment accuracy/Scan localizer accuracy
- Spatial resolution (MTF)
- Image Uniformity
- Noise magnitude
- Uniformity Index
- Contrast Detail
- Contrast-to-noise ratio (CNR)
- Slice sensitivity profile (SSP)

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AutoQA Plus CT Catphan®

Phantoms Supported

- Phantoms: Catphan 700, 604, 600, 549, 504, 503, 500, 411, 410

Standard Processing Features

- Pixel Size/Spatial Linearity - verifies the expected pixel size from the measured distance between four pins (3 air/1 Teflon) in the Catphan® section CTP401 and CTP404. Spatial Linearity reported as the average measured pin to pin distance

- CT Number accuracy – Mean CT values are measured for each reference material. Least squares fit for the mean CT numbers and linear attenuation coefficients for 20 energies from 40 to 140 keV yields the effective energy.

- Slice Thickness accuracy – The full-width at half-maximum (FWHM) of the CT number profile for each wire or bead ramp is measured. A trigonometric conversion based on the known ramp angle is used to yield the slice thickness.

- Laser Alignment accuracy/Scan localizer accuracy - uses the paired slice thickness ramp positions relative to the image center to verify slice location or offset from the expected location selected by the laser or scan localizer.

- Spatial Resolution (MTF) – The modulation transfer function (MTF) is calculated from the discrete Fourier transform of the vertical and horizontal LSF's of the point spread function of the bead or wire.

- Image Uniformity – Uniformity is the maximum absolute difference between the center and peripheral ROI mean CT numbers. Using ROI's with a diameter of 10% of the phantom diameter (IEC 61223-3-5).

- Noise Magnitude - is calculated from a centered ROI 40% of the phantom diameter, (IEC 61223-3-5).

- Uniformity Index– Vertical and horizontal profiles 10 pixels wide are generated. The Uniformity Index is calculated as the percentage of the pixels within an acceptable range; the mean + 2 times the central noise or + 10H, whichever is smaller.

- Contrast Detail - Contrast-Detail curve data is calculated based on the measured noise.

- CNR - measurements for the low contrast supra slice targets in the CTP515 module

- Slice sensitivity profile (SSP) - Z-axis spatial resolution. The calculated FWHM of a profile of the maximum CT number of an impulse source bead in a series of helical images.