

Manufacturer's Recommendations for Alternate Dental CBCT QA Program

**J. Morita Model: Accuitomo X800**

**Table 6** Requirements for Dental CBCT

| <b>Item</b> | <b>Required Test or Procedure</b>  | <b>Frequency</b>     | <b>Substitute Test or Procedure</b>   | <b>Standard</b>   |
|-------------|--|----------------------|---|---|
| 1           | Scan Increment Accuracy  | Initially & Annually | None – Not Applicable   | None – Not Applicable   |
| 2           | Scan Localization Light Accuracy   | Initially & Annually | Veraview X800 Quality Test Procedure Section 3.5 CT Artifacts/ Patient Positioning Precision Page 13-16 (Appendix A)                              | Check that each positioning for the X, Y, Z planes is within $\pm 3.0$ mm.  |
| 3           | Patient Dose (Multiple Scan Average Dose) MSAD or Computed Tomography<br><br>Dose Index-CTDI | Initially & Annually | Veraview X800 Quality Test Procedure Section 4 CT Function Page 27<br>Section 7 Additional CT User Information for U.S.A. Page 28-30 (Appendix A) | DAP shall be within $\pm 50\%$ from displayed value after exposure. Repeat this test 3 times.<br><br>CTDI100 center shall be within $\pm 30\%$ from the displayed value after exposure. Repeat this test 3 times. |
| 4           | Pre-Patient Collimation Accuracy   | Initially & Annually | Veraview X800 Quality Test Procedure Section 4 CT Function Page 26 (Appendix A)   | X-ray Field does not exceed the detector.   |
| 5           | Contrast Scale   | Initially & Annually | Veraview X800 Quality Test Procedure Section 3.2 Greyscale Page 6-9 (Appendix A)  | Check that all four regions are within the acceptable range.<br><br>Check that the lines do not overlap.  |
| 6           | CT Number for Water  | Initially & Annually | Veraview X800 Quality Test Procedure Section 3.2 Greyscale Page 6-9 (Appendix A)  | Check that the value for GreyScale (SD of 5 Means) is no more than 12.5.  |
| 7           | Slice Thickness  | Initially & Annually | None- Not Applicable  | None- Not Applicable  |
| 8           | Field Uniformity   | Initially & Annually | Veraview X800 Quality Test Procedure Section 3.2 Greyscale Page 6-9 (Appendix A)  | Check that the value for GreyScale (SD of 5 Means) is no more than 12.5.  |
| 9           | Low Contrast Resolution  | Initially & Annually | Veraview X800 Quality Test Procedure CT Function Page 26 (Appendix A)   | The grey level and the standard deviations of the Acrylic plastics and bone equivalent plastic shall not overlap.   |

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|----|---|----------------------|---|---|
| 10 | High Contrast Resolution                      | Initially & Annually | Veraview X800<br>Quality Test Procedure<br>Section 3.3 MTF<br>(Modulation Transfer<br>Function)<br>Page 10-12<br>CT Function<br>Page 26<br>(Appendix A) | SD resolution 10% or<br>higher at 2.0 lp/mm.<br><br>HR resolution 10% or<br>higher at 2.5 lp/mm.<br><br>The MTF value at 2.0<br>Lp/mm at SD Lp/mm at<br>HR shall be more than or<br>equal to 0.1 (10%).                       |
| 11 | Noise   | Initially & Annually | Veraview X800<br>Quality Test Procedure<br>Section 3.2 Greyscale<br>Page 6-9<br>CT Function<br>Page 26<br>(Appendix A)                                  | Check that the value for<br>Noise (SD at A) is no<br>more than 12.5.<br><br>The standard deviation of<br>the grey scale of center<br>region of the Contrast<br>phantom shall be less than<br>12.5 (10% of the full<br>scale). |
| 12 | Scan Protocol Review                          | Initially & Annually | Same as NJAC 22.10(a)   | Same as NJAC 22.10(a)   |
| 13 | Review of Facility and Technologists QC Tests | Initially & Annually | Same as NJAC 22.10(a)   | Same as NJAC 22.10(a)   |
| 14 | Physicist Report and Recommendations          | Initially & Annually | Same as NJAC 22.10(a)   | Same as NJAC 22.10(a)   |