

Service Bulletin

Preventive Check of XML File delivered with Varian Detectors

Task			
Timing		Category	Scope
Next service as agreed with customer	<input type="radio"/>	Apply at all sites	PowerHelp complaint / HQ issue: HQ_1204050001
	<input checked="" type="radio"/>	Apply at affected sites as listed below	
	<input type="radio"/>	Optional to improve functionality of product	

Task Tracking

After completion of your task the following entry in your Service Report is required:

DD+DIS126.12E

*

* Insert the document number into the field "Comment" (SMS form).

Purpose of this document:

It contains all necessary information about the correction of poor image quality occurring in Varian detectors because of wrong XML files which are delivered with these detectors.

Affected serial number(s) / batch:

Every Varian Detector delivered since 02/2012 is potentially affected and should be checked

The signatures on the approval page indicate the solutions described in this Service Bulletin have been reviewed and are NOT reportable because no actions are taken to reduce a "Risk to Health" according to our risk assessment process.

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1 Introduction/purpose

<i>Symptom</i>	Poor image quality (contrast) or failing ATP with Varian detectors delivered since February 2012.
<i>Cause</i>	Wrong values in XML files delivered with a limited amount of detectors by Varian.
<i>Solution</i>	<p>At time of installation or if image quality issues point to a gain range or maximum count issue:</p> <p>Check the values in the ATP document and correct if necessary in the XML file as described in section 3.</p>

**IMPORTANT:**

In case the DVD with the ATP document delivered with the detector is defect or lost:
Exchange the detector as described in the manual:
DX-D Portable DR Detector (DD+DIS020.11E)

2 Prerequisites



REFERENCED DOCUMENTS:

ATP document (PDF file on DVD or document delivered with detector)
DX-D Portable DR Detector Manual (PDF file on DVD delivered with the DX-D 100)

3 Instructions



REQUIRED TIME:

Approximately 10 minutes for replacing the incorrect values by the correct ones.

- (1) Navigate to the XML file in the folder **Receptor Test Summary** on the DVD delivered with the Varian detectors.

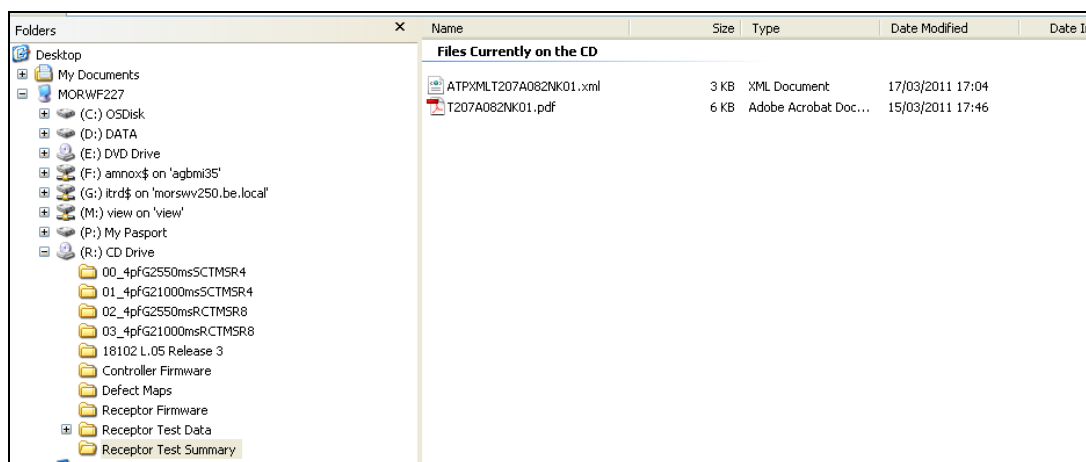


Figure 1

- (2) Open the XML file via Notepad.
- (3) Scroll to line **sensitivity**

```
<StdDevInROI>2.78</StdDevInROI>
<MaxDevInROI>4.0</MaxDevInROI>
<StdDevOfRowMeans>0.31</StdDevOfRowMeans>
<MaxDevOfRowMeans>0.42</MaxDevOfRowMeans>
</Mode>
</NoiseMeasurement>
- <Sensitivity>
  - <Mode ModeNum="0">
    <Dose_mR>0.830</Dose_mR>
    <Counts>873</Counts>
    <Gain>0.95</Gain>
    - <GainRange>
      <Min>0.8</Min>
      <Max>1.2</Max>
    </GainRange>
    <MaxCounts>10820.0</MaxCounts>
    <MaxLinDose_uGy>113.89</MaxLinDose_uGy>
    <MinimalMaxLinDose_uGy>75</MinimalMaxLinDose_uGy>
  </Mode>
</Sensitivity>
- <SignalToNoiseMeasurement>
  - <Mode ModeNum="0">
    <Dose_mR>0.830</Dose_mR>
    <AvgPixelValue>873.0</AvgPixelValue>
    <StdDevPixelValues>6.61</StdDevPixelValues>
    <NormSNR>128.57</NormSNR>
    <MinimalNormSNR>125</MinimalNormSNR>
  </Mode>
</SignalToNoiseMeasurement>
- <FlatFieldCorrectedImages>
  - <Mode ModeNum="0">
    <LowDose_HighDose_And_40kV_Images>4</LowDose_HighDose_And_40kV_Images>
    <Status>PASS</Status>
  </Mode>
  - <Mode ModeNum="1">
    <LowDose_HighDose_And_40kV_Images>2</LowDose_HighDose_And_40kV_Images>
```

Figure 2

- (4) Compare the sensitivity values from the XML file with the sensitivity values in the last line of the ATP document.

M2: 4pf G2 550ms RCT MSR8	2.43	4.0	0.27	0.42					
M3: 4pf G2 1000ms RCT MSR8	2.78	4.0	0.31	0.42					
Flat Field Corrected Images									
Mode	Low Dose, High Dose and 40kV Images		Pass / Fail						
M0: 4pf G2 550ms SCT MSR4	4 images		PASS						
M1: 4pf G2 1000ms SCT MSR4	2 images		PASS						
M2: 4pf G2 550ms RCT MSR8	2 images		PASS						
M3: 4pf G2 1000ms RCT MSR8	2 images		PASS						
Defect Map Analysis									
Mode			Status						
M0: 4pf G2 550ms SCT MSR4			PASS						
M1: 4pf G2 1000ms SCT MSR4			PASS						
M2: 4pf G2 550ms RCT MSR8			PASS						
M3: 4pf G2 1000ms RCT MSR8			PASS						
MTF M0: 4pf G2 550ms SCT MSR4									
Mode	MTF		Minimum Value						
M0: 4pf G2 550ms SCT MSR4	53.4 %		48 %						
Lag Measurements									
Lag Calibration Dose mR	Lag Calibration Counts	High Dose mR	High Dose Lead						
2.20	1513.7	152.3	554.7						
High Dose No Lead	Lag No Lead	Lag Lead	Lag	Max.					
97866.595	99.7	98.9	0.00082	0.005					
DCDS Rollover									
Mode			Status						
M0: 4pf G2 550ms SCT MSR4			PASS						
M1: 4pf G2 1000ms SCT MSR4			PASS						
M2: 4pf G2 550ms RCT MSR8			PASS						
M3: 4pf G2 1000ms RCT MSR8			PASS						
Uniformity Test									
Mode	SnAnalysis		Maximum Value						
M0: 4pf G2 550ms SCT MSR4	16.07		25 %						
Sensitivity M0: 4pf G2 550ms SCT MSR4									
70 kV RQA 5	Avg Pixel Value (ADU counts)	Std Dev Pixel Values	SNR	Min SNR	Sensitivity (cts/uR)	Sensitivity (cts/uR) Range	Max Counts	Max Lin. Dose (uGy)	Min
100mA 80ms	873.0	6.61	128.57	125	0.95	0.8 to 1.2	10820.0	113.89	75

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Figure 3

- (5) In case different values are detected, replace these incorrect values in the XML file by the correct values from the ATP.
- (6) Save the XML file.

4 Verification

Take exposures with the correct XML files and check if they fulfill all requirements.

5 Keywords

XML, image quality

6 Version history

Version	Change	Date
1.0	Initial Version	06 - 2012



Details as of PDF Creation Date

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