Simplifying the Transition to DIGITAL RADIOGRAPHY

FUSION DIGITAL X-RAY DETECTOR

Full SIZE DIGITAL X-RAY ACQUISITION
30% GREATER THROUGHPUT THAN REDUCED SIZED DETECTORS
ELECTRICAL & ELECTRONIC

NO CALIBRATION AND NO GENERATOR CONNECTION... Problems created when your old x-ray system is depended on for timing...the most crucial part in the digital image creation... are eliminated. These are the vast majority of service issues in DR retrofits.

AED Automatic Exposure Detection and ACC Automatic Calibration Control are offered only with the FUSION DR Detector from Radiology Solutions.

MECHANICAL

FITS IN YOUR BUCKY TRAY WITHOUT MODIFICATION...
Ultra-Light Cassette Sized Detector easily moves from table to table top to wall to stretcher with ease.

HDPLUS

UNIQUE SCINTILLATOR TECHNOLOGY FROM RADIOLoGY SolutIoNs

While Cesium remains the absolute best performer, HD Plus is new hardware/software technology, which gets exciting new levels of performance from a special form and chemistry of gadolinium

REDUCED DOSE
REDUCED BREAKAGE
REDUCED COST

CABLE FREE

A COST EFFECTIVE, MORE EFFICIENT ALTERNATIVE TO WIRELESS

WHY IS WIRELESS DESIRABLE?
1. We do not want to drag a cable from one place to another
2. We can’t rotate a 14” by 17” detector with a cable on it without bucky modification ... and rotation of the detector increases procedure time 30%

THE SOLUTION
1. Allow the detector to be rapidly and easily disconnected and reconnected
2. Use a moveable 17” by 17” detector that needs no rotation
3. Reduce the cost 60% so a second detector can be considered

17” BY 17”

THE INAPPROPRIATE MIMICKING OF FILM CASSETTE SIZES INSURES THE THROUGHPUT LIMITATIONS OF THOSE SIZES

14” BY 17” WAS THE FILM CASSETTE STANDARD BECAUSE OF
FILM COST --- FILM FILING --- WEIGHT

THE DR DETECTORS DO NOT HAVE THESE LIMITATIONS SO 17” BY 17” IS THE LOGICAL DEFAULT.

• NO ROTATION OF THE DETECTOR
• NO MODIFICATION X-RAY SYSTEM TO PROVIDE THE ROTATION
• INCREASED THROUGHPUT

17” BY 17”
**Specification**

<table>
<thead>
<tr>
<th>Application</th>
<th>General Radiography</th>
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<tbody>
<tr>
<td>Sensor</td>
<td>a-Si TFT array Flat Panel Detector</td>
</tr>
<tr>
<td>Conversion Screen</td>
<td>CsI:Tl / HD(Premium Gd2O2S:Tb)</td>
</tr>
<tr>
<td>Active area</td>
<td>17 x 17 inch (430 x 430 mm)</td>
</tr>
<tr>
<td>Sensor Pixel</td>
<td>3,072 x 3,072 (Over 9 Mega Pixel)</td>
</tr>
<tr>
<td>Pixel Pitch</td>
<td>139 μm (3.6 lp/mm Nyquist)</td>
</tr>
<tr>
<td>A/D Conversion</td>
<td>14bits</td>
</tr>
<tr>
<td>Preview access time</td>
<td>2 ~ 5 sec (approx.)</td>
</tr>
<tr>
<td>Image Capture Cycle time</td>
<td>2 ~ 5 sec (approx.)</td>
</tr>
<tr>
<td>Wired Interface(Data Output)</td>
<td>Gigabit</td>
</tr>
<tr>
<td>Auto Trigger</td>
<td>Auto X-ray sensor</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 100-240V, 50/60Hz</td>
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**Modulation Transfer Function**

MTF is a useful measure of true or effective resolution because it measures the capacity of the detector to transfer the input information to its output faithfully.

**Detective Quantum Efficiency**

\[
DQE(u) = \frac{\text{SNR}^2_{out}(u)}{\text{SNR}^2_{in}(u)}.
\]

It's the combination of low noise and superior contrast performance that allows digital X-ray systems to offer significant improvements in the detectability of low-contrast objects.

**Line Pair Resolution**

Vendors publish the Nyquist resolution, this is the most misleading measure because it is a theoretical limit based on the size of the pixel. It is not an actual measure of resolution. I.E.; using Nyquist, CCD erroneously appears to have the best resolution because of a near microscopic pixel size.

No detector sold today has higher relative performance in MTF, DQE, dynamic range or actual spatial resolution.

No single measure will tell you how a detector can perform and since all of these numbers are equally important in this effort, they must all be considered.
Drawing on its extensive technology, experience, and resources, Radiology Solutions is expanding the availability of digital radiographic imaging for all levels of medicine through targeted engineering. Radiology Solutions offers a growing family of high-performance, Next-Generation Digital Imaging Solutions to meet the clinical challenges of today and tomorrow.

The FUSION Digital Detector and IMAGICA Image acquisition with ANALYTICA Image Processing guarantees a crystal clear diagnostic result every time. Only RADIOLOGY SOLUTIONS offers ANALYTICA Image Processing, the culmination of over 25 years of image processing experience. ANALYTICA optimizes images to meet the specific needs of today’s medical imaging demands.

FUSION & IMAGICA ARE THE HARDWARE AND SOFTWARE COMBINATION RADIOLOGY SOLUTIONS HAS ENGINEERED THAT ENABLES REAL DIGITAL ACQUISITION AND ANALYSIS