

Digital X-ray Imaging:

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The introduction of digital radiography in dentistry was about 25-years ago ,while analogue film has already been in use for more than 100 years .

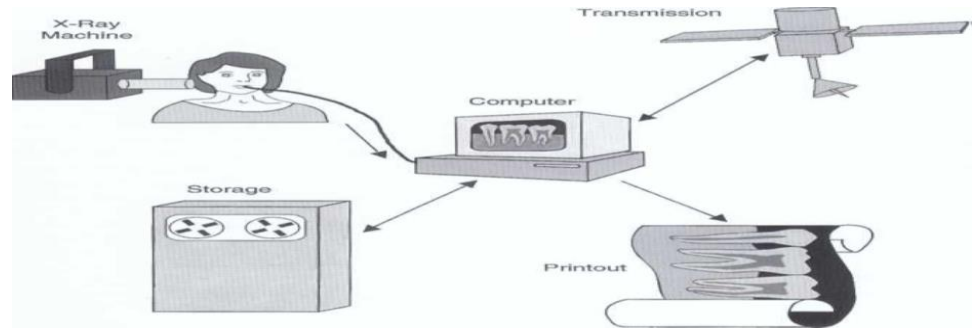
Computerized radiography systems can create an image on the monitor by converting an analog image to a digital signal, which can then be recognized and displayed by the computer. This arrival of the new technology, for many, relieved the burden of forgotten images, lost films or poor diagnostic quality of duplicates.

There is no need for a dark room, changing chemicals and staining.

Types of Digital Radiographic Systems-:

Currently, there are two types of digital radiography systems available: direct and indirect. In order to form a digital image with a direct system (could be directly obtained or converted from analog to digital), a wire-based sensor (containing a computer chip inside a protective casing) is connected to a computer (utilizing wiring and cable system).

Using a variety of holders, a sensor is placed in patient's mouth, where a charge-coupled device (a computer chip or a CCD, also referred to as the heart of Digital Dental Radiography) captures the light information emitted by the phosphor plate (contained within the sensor) when activated by the x-ray beam . Recorded parameters are sent directly to the computer where they are digitized and presented on the computer screen as an image. Such image can then be saved and stored within the software supplied by the manufacturer.



Indirect digital radiography units, on the other hand, use film-like photo-phosphor plates, which need to be activated by the x-ray beam and then scanned by a special device that processes the image from the phosphor plate. These plates appear like the traditional x-ray film and are held by existing x-ray holders.



Figure 5

Advantages of digital imaging:

By way of comparison digital imaging: (1) provides time savings when solid-state technology is employed; (2) facilitates communication with the patient when displayed on a computer monitor; (3) eases storage, back-up and retrieval; (4) permits computed enhancements; (5) eliminates the recurring expenses of film and

processing solutions -- and of the disposal of spent solutions; (6) facilitates the use of assessments such as anatomic measurements both for endodontic root length determination and for dental implant planning; (7) opens the way to electronic communication for consultations;

Disadvantages of digital imaging:

- 1 -Expensive
- 2 - The connecting cable can make intra oral placement of rigid sensor difficult
- 3 -Loss of image quality and resolution on the hard copy print-out when using thermal, laser ink-jet printers
- 4 -Image manipulation can be time consuming and misleading to the inexperienced
- 5-Images can be faked out through the use of third party software

