

Toshiba plays a significant role in the global medical instrument business, paying consistent attention to planning, development, production, sales and maintenance service. We aim to offer patient/doctor-friendly instruments that utilize our successful development of fast and high-resolution imaging technologies to assist high quality diagnosis. Imaging technologies for motile heart and circulatory organs serve as a prime example.

Aquilion™ 64 Whole-Body X-ray CT Scanner



Aquilion™ 64 whole-body X-ray CT scanner



Clinical image of heart (Courtesy of Juntendo University Hospital)

Toshiba Medical Systems Corporation has developed the Aquilion™ 64-slice system as a high-end model in Toshiba's lineup of X-ray CT scanners. The main features of this system are described below:

- The system is the first in the world to support simultaneous acquisition of 64 slices per single rotation. The scan time is reduced to 1/4 that of conventional multislice CT, minimizing patient discomfort and facilitating the examination of infants and seriously ill patients who have difficulty in holding their breath.
- An image reconstruction algorithm that provides high spatial resolution over the entire imaging field is employed. Since this algorithm can also be used for ECG (Electrocardiogram)-gated scanning, high-quality images can be obtained even in cardiovascular examinations.
- The image reconstruction unit has been upgraded to increase the reconstruction speed as well as to improve the image processing workflow, resulting in significantly higher patient throughput.
- An algorithm that eliminates streak artifacts, which are often observed near the shoulders and in the pelvis, is incorporated. This is very effective when examining large patients or when performing low-dose scanning.
- Blood vessel analysis software, which automatically extracts blood vessels and is used to assess vascular cross sections, is incorporated. Using this software, the cross-sectional area and stenosis ratio of blood vessels can be calculated. It is expected that this software will prove useful in cardiovascular examinations, particularly those involving the coronary arteries.

Infinix™-i Cardiac/FPD Angiography System



Infinix™ -i Cardiac/FPD angiography system



Left coronary angiogram

Toshiba Medical Systems Corporation has developed the cardiac angiography system Infinix™ -i series Cardiac/FPD, which incorporates a new X-ray flat panel detector (FPD) that converts X-rays into electronic signals and directly generates digital images. This system supports the latest percutaneous coronary intervention (PCI) studies using state-of-the-art image processing technology, which maximizes the advantages of the FPD.

The main features of the system are as follows:

- The compact 20 cm×20 cm FPD enables C-arm positioning with steep angulation during cardiac imaging procedures.
- The 194 μm pixel size FPD provides high-resolution dynamic imaging with a 1024×1024 matrix, resulting in improved visibility of the guide wires and stents placed in coronary vessels.
- The wide dynamic range with dynamic digital compensating filter (DDCF) reduces halation in lung regions, resulting in enhanced cardiac imaging with superior contrast.
- Pulsed fluoroscopy of 20 frames/s delivers the optimum dose to patients without compromising image quality for coronary vessels with fast motion.
- Excellent compatibility with conventional systems allows installed bases to be upgraded to FPD systems on site at minimum cost and with minimum down-time.