

Press Release

M-GB-08003

November 19, 2008

High-tech for the 21st century

Pioneers in diagnostic imaging

**State-of-the-art X-ray and ultrasound systems for hospitals/
Excellent image quality improves diagnostic reliability/
User-friendly, intuitive operation**

Shimadzu, world-wide manufacturer of diagnostic imaging equipment, has been counted among the most innovative medical technology companies for the past 100 years. Already 10 months after Wilhelm Conrad Roentgen discovered X-rays, Shimadzu produced the first X-ray image in Japan. Today, Shimadzu counts among the pioneers in imaging technology, especially for the development of C-arm systems for cath labs and interventional radiology, X-ray systems, fluoroscopy systems, in projection radiology and mobile X-ray as well as ultrasound systems.

Safire is one of the most recent developments in X-ray technology and is the world's first large-field flat-panel X-ray detector with direct conversion. X-rays are directly converted into electrical signals using amorphous selenium – without the need for indirect light conversion. The result is an outstanding image quality, free of any influence of scattering with a hitherto unparalleled ability for detail discrimination. With its dynamic detector system that can acquire 30 images per second, *safire* offers a wide range of new and revolutionary applications in radiology, fluoroscopy and cardiology, such as tomosynthesis, dual-energy subtraction and slot-radiography. Through 3D reconstructable, ultra-fast C-arm sequences, the

user can create CT-like images (cone beam CT). *Safire* flat-panel detectors – the new detector generation, based on its markedly faster diagnosis and extension of diagnostic possibilities – are integrated into cardiology, fluoroscopy and radiology systems.

C-arm systems

Under the name BRANSIST Shimadzu offers floor- or ceiling-mounted as well as biplane C-arm systems with integrated *safire* flat-panel detectors (22 x 22 cm or 43 x 43 cm). In addition to the brilliant image quality, the BRANSIST system enables real-time operation at a rotation speed of up to 60° per second. Additional features are the straightforward, intuitive one-hand operation via the CyberGrip as well as Shimadzu's patented RSM-DSA digital filtering that results in a blur free three-dimensional mapping of active vessels.

Radiography and fluoroscopy

Through the integrated 43 x 43 cm *safire* flat-panel detector, the SONIALVISION *safire* X-ray instrument is being upgraded to a multi-functional system. With a detector shift of 198 cm, full leg/full spine radiographies can be created in detector image quality. In orthopaedics, tomosynthesis can be used for instance to create three-dimensional images of patients standing upright during prostheses check-ups. SONIALVISION *safire* is extremely well suited for this purpose through its low access of 47 cm and a capacity of up to 318 kg for use in bariatrics.

Projection radiography

RADspeed *safire*, the digital high-end product of the RADspeed family, combines high patient throughput with optimal convenience for users as well as patients and, at the same time, delivers brilliant image quality. Using the optional 'dual-energy subtraction' function, the dynamic *safire* flat-panel detector can, for instance, produce thorax images using varying radiation intensities and subtract them from each other. In this way it becomes possible to acquire clear images of difficult to diagnose findings such as round lesions that are often obscured by ribs.

Mobile X-ray

At this time, Shimadzu introduces the new mobile fully digital X-ray system *MobileDaRt Evolution* with most modern technology. With its high-performance 32 kW generator, an optimal image quality can now also be guaranteed under the most difficult conditions, for instance in trauma and intensive care medicine or on patient wards. Based on its dimensions of 35 x 43 cm, the high-performance flat-panel detector covers the entire radiological spectrum. With the integrated touch-screen monitor an image can be processed already within 3 seconds after exposure. In this way, the *MobileDaRt Evolution* closes the “work-flow gap” in fully digitally equipped clinics, as the critical intensive care or trauma images are already available within a few seconds after creation on the PACS diagnostic workstations.

Ultrasound systems for all application areas in clinics and private practice

The ultrasound segment consists of black-and-white as well as color systems used in routine and high-end applications. The digital instruments distinguish themselves by their ergonomic design and their large probe selection. Highly sensitive transducers and numerous image-processing techniques support the premium image quality. In addition, the *SDU-2200 PRO* color Doppler fulfils the fundamental requirements of cardiac diagnosis.

Shimadzu’s philosophy: added value

As a globally operating company with a focus on research and development, Shimadzu uses a simple but fundamental guiding principle: offering the highest quality diagnosis at the highest patient- and user-friendliness. Customer requirements and reactions on all continents are incorporated into the development of new instruments. In this way, each and every customer can take advantage of Shimadzu’s globally collected experiences.



Caption 1: BRANSIST VC17 delivers ultra-fast C-arm sequences thanks to 3D reconstructable CT-like image representation (cone beam CT).



Caption 2: SONIALVISION *safire* is a multifunctional flat-panel workstation with optional slot-radiography and tomosynthesis functionality.



Caption 3: The *MobileDaRt Evolution* stands for mobile state-of-the-art technology.

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