

Press Release

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RADspeed Pro EDGE

**New digital radiography system RADspeed Pro EDGE /
Extended functionality /
Wide range of clinical functions facilitates comprehensive diagnostics**

Shimadzu, a worldwide leading manufacturer of diagnostic imaging equipment, displays its new digital radiography system RADspeed Pro EDGE during the 2016 ECR congress in Vienna, Austria. The system provides a wide range of functionalities: from tomosynthesis via dual-energy subtraction to modern auto-stitching to support diagnostics in clinical applications.

General radiography systems are used for many different parts of the body, such as the chest and abdomen or bones and joints. In orthopedic surgery they have become an important instrument for the initial diagnosis of a wide variety of diseases. In the past few years, particularly radiography systems with detectors have gained increasing importance. The main reason for this is that digital imaging technology is used for a growing number of applications and thereby delivers images providing excellent diagnostic capabilities for clinical applications.

RADspeed Pro EDGE combines the advantages of the well-known RADspeed Pro series in one instrument – for example the highly praised easy operability or the comprehensive measures to reduce exposure levels. Numerous further functionalities can be added: tomosynthesis, allowing the generation of continuous cross-sectional images based on just one single tomographic scan, dual-energy subtraction producing images of soft tissues and bone tissues, or the auto-stitching method for images covering the entire lower extremities or entire spine. In addition to conventional projection radiography the diagnostic possibilities can be extended even further using these optional functionalities. The examination workflow is also optimized by allowing the use of tomosynthesis and

dual-energy subtraction directly in the radiography room, within the normal flow of the examination process. Upon request, the system also includes Shimadzu's proprietary independent tomosynthesis workstation to perform tomosynthesis processing in parallel with examinations. This increases the examination throughput and reduces the stress on patients due to shorter waiting and examination times.

Features

Wide range of functions optimizes diagnostic capabilities

1. Tomosynthesis

Shimadzu has drawn on its extensive experience with tomosynthesis applications for fluoroscopy systems and used it for the development of the digital radiography system RADspeed Pro EDGE. Tomosynthesis allows you to quickly and easily obtain multiple digital cross-section images from a single linear tomography scan. The raw scan data can then be used to reconstruct three-dimensional, continuous cross-sectional images – as many times as desired. Besides, tomosynthesis offers great flexibility when scanning patients while applying different loads – in a standing position, in a supine position on the table, or with elbows or knees bent.

Metal artefacts are reduced and have a significantly lower impact on the diagnostic imaging. This also allows the assessment of bones near metal objects, such as the union status of bones fastened with bolts or plates in orthopedic surgery.

2. Dual-energy subtraction

Dual-energy subtraction utilizes the difference in X-ray absorption levels of bones and soft tissue to generate separate images of soft tissue and bone tissue, in addition to projection radiography images. This separation is achieved by successively applying high and low voltages and then using subsequent separate image processing. This enables you to render nodes obscured behind ribs in the

soft tissue of the chest area or calcifications in bone structures, which is especially useful for diagnoses in the chest area, such as lung cancer.

Auto-stitching radiography

The newly developed bucky table facilitates obtaining 120 cm long-view images in the supine position – this is the largest available length among all manufacturers. The bucky stand makes it possible to obtain images of the entire spine and entire lower extremities with a length of up to 160 cm – even of tall patients or those having difficulty standing. One of the key features of the entire RADspeed Pro series is the automatic linking of the settings made on the X-ray tube with the bucky table or bucky stand with subsequent automatic image stitching.

3. Dedicated tomosynthesis workstation allows parallel processing

RADspeed Pro EDGE is the only system on the market to include a separate image processing workstation for the reconstruction of tomosynthesis images: the RAD Side Station. This leaves the regular image processing console free so that additional images can be obtained even during tomosynthesis image reconstruction, which can increase examination throughput.



Figure 1: RADspeed Pro EDGE. Extended functionality and comprehensive diagnostic capabilities.



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