

# Shimadzu Medical Imaging Systems



*Passion for Details*

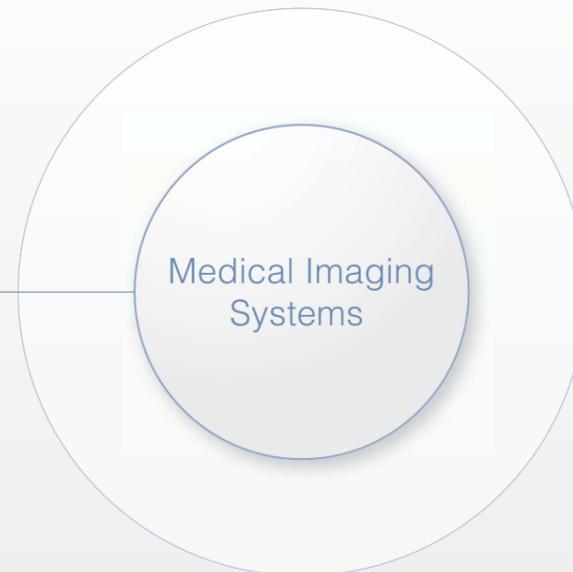
*Discovering new clinical values in X-ray imaging*

# The Four Facets of Shimadzu

In order to “contribute to society through science and technology,” we have continually expanded our activities since 1875. At present, our advanced instruments and systems are supporting people in their daily lives through our four main product lines. These consist of medical imaging systems that support accurate and efficient diagnoses and safer patient treatment, analytical & measuring instruments that perform vital roles in a variety of research and development activities, aircraft equipment to ensure flight safety and onboard comfort, and industrial equipment that facilitates the rapid evolution of both semiconductors and cutting-edge devices such as flat panel displays. Furthermore, by fusing and further developing these technologies, we are creating solutions for the future. Our fervent desire to “contribute to society through science and technology” knows no limits, and is taking us into new areas such as next-generation medical treatment, environmental remediation support, and industrial measurement.



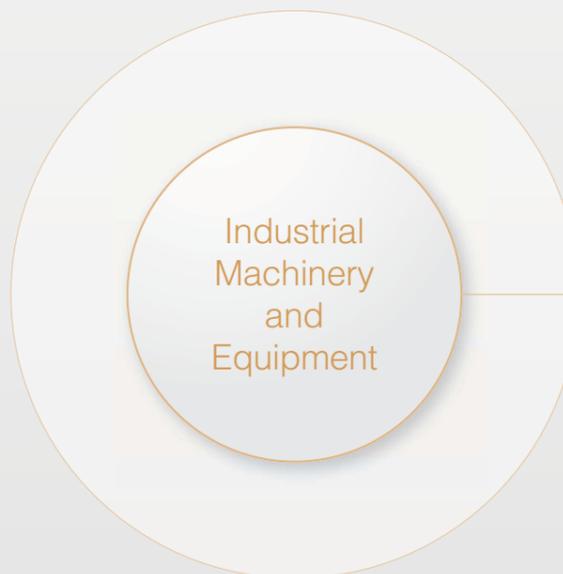
Our advanced medical diagnostic imaging systems and applications are contributing to the early detection and proper treatment of disease, opening up a new world of possibilities for medical facilities.



Our wide range of aircraft equipment is increasing both the safety and comfort of passengers to reduce the effects of stress during flight.



Our analytical, measuring and testing instruments such as Gas Chromatograph etc. are contributing to research, technology development, environmental and quality control activities in a wide variety of fields.



Our development of advanced-level manufacturing and testing equipment is meeting the needs of next-generation production in cutting-edge industrial fields.



# Medical Imaging Systems

## Saving Lives Through the Early Detection of Disease

Until we reach the day when any disease can be completely cured by medical treatment, Shimadzu will continue to search for new ways to facilitate the early detection of disease.

Accurate diagnostic imaging information is essential in the early detection and proper treatment of intractable diseases. To enhance your examination efficiency and safety, while reducing radiation dose, we offer a broad range of reliable X-ray imaging systems with world-leading technology and cutting-edge applications based on more than 100 years of our extensive clinical experience in the X-ray field.



### Cardiac & Angiography System

Shimadzu cardiovascular and angiography systems provide outstanding image quality and various cutting-edge applications. The better visibility achieved by our systems will enhance the safety and efficiency in your interventional procedures and reduce X-ray dose levels.



### R/F System

Shimadzu has extensive experience in this field since our development of the world's first remote-controlled R/F table system in 1961. In combining high-resolution X-ray detectors with our latest digital imaging technology, our systems achieve an excellent balance between high image quality and low dose for DR, Barium, Endoscopy, Urological, Gynecological, Orthopedic and Bariatric studies etc.



### Surgical C-arm System

To meet the demands of modern OR and ER, Shimadzu has provided the OPESCOPE with superb operability. The latest ACTENO is the pinnacle of our evolving OPESCOPE-series developed from customer feedback in our ongoing pursuit for better performance and enhanced functionality.



### General Radiography System

General Radiography systems are the must have items to be used most frequently in radiology department. Therefore ease-of-use, high productivity and durability are vital. Fulfilling these requirements, we have a wide range of solutions to best meet your needs, from the most advanced DR (Digital Radiography) systems to basic radiography systems for CR & film.



### Mobile X-Ray Systems

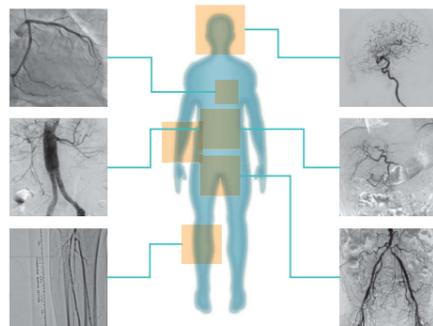
Countless Shimadzu "MobileArt" and "MobileDaRt" are used and loved all over the world. With the newly named "Evolution" series, we have achieved even more innovations on them. Our latest "MobileArt Evolution" and "MobileDaRt Evolution" with FPD provide further advancements in your workflow, expanding into the ER and pediatric NICU etc.

Crossover Angiography System

# Trinias series / BRANSIST alexa MiX package

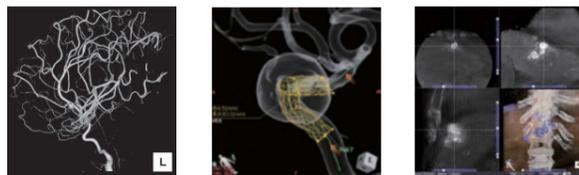
This crossover angiography system with a 12" Flat Panel Detector provides full body coverage to support both cardiac PCI and peripheral angiographic procedures.

- Our C-arm achieves excellent longitudinal and lateral movements to realize wide imaging coverage safely without moving a patient by tabletop slides or rotations.
- The latest user-interfaces with outstanding operability help you concentrate on your procedure and patient care.
- Premium dose reduction and management features ensure patient and operator safety.



### SCORE 3D applications Premium Option

3D-Angio software creates high-quality 3D images of vessels. CT-like imaging helps system operators visualize both feeding vessels and diabrosis area structures during procedures.



3D image of internal carotid artery      Virtual Stent      HCC

### SCORE Navi/Navi+Plus Premium Option

SCORE Navi/Navi+Plus is an application that utilizes pre-procedure images to support minimally invasive procedures. By linking the C-arm operations to pre-procedure MDCT images, it enables MDCT images to be used as references for interventions, which results in reduced contrast media use.

### Trace MAP (SCORE MAP)

Trace MAP supports advanced EVT procedures by automatically overlaying the outline of vascular walls extracted from DSA images onto fluoroscopic images, dramatically improving the visibility of wires and devices.



Trace MAP

### SCORE RSM

SCORE RSM is an extremely motion tolerant DSA technique. This application is especially effective for tracking across the entire lower extremities, 3D imaging in combination with C-arm movement and examinations on patients who have difficulty holding their breath.



\*The photo is a reference image created by combining dynamic images. It cannot be displayed in its entirety on the monitor.

Digital Cardiovascular System

# Trinias series MiX package

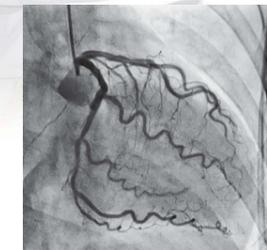
Trinias F8/C8/B8 MiX packages are the state-of-the-art cardiovascular systems with an 8-inch FPD optimized for PCI procedures.

Utilizing our latest technology and features, the Trinias achieves outstanding image quality while minimizing the exposure dose level for both patients and physicians.

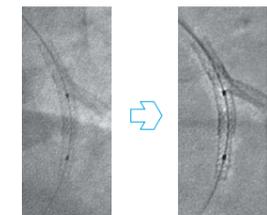


### SCORE StentView+Plus Premium Option

SCORE StentView+Plus is Shimadzu original software developed to enhance the visibility of stents in real-time during PCI procedures. This is particularly effective for assessing positional relationships between overlapping stents, or when re-expanding a stent using a balloon.



Left coronary artery



Without StentView      With StentView

Digital Angiography System

# BRANSIST safire VC17 package

Our BRANSIST safire VC17 ceiling-mounted digital angiography system features a 17 x 17-inch direct-conversion FPD, the largest in its class.

- Class-leading 17 x 17-inch detector covers a wide field of view, while retaining fine-detail resolution of body parts.
- Unrivaled image sharpness from our direct-conversion FPD ensures clear visibility of the finest blood vessels.
- "INTELLISHIELD", Proximity and Touch Sensor are installed on the FPD as the contact avoidance function, providing additional patient safety.



17 x 17-inch FPD image



Universal R/F System

# SONIALVISION G4

BEST-in-CLASS, a true "Multi-purpose" SONIALVISION system is ideal for a wide variety of examinations, including DR, Barium, Endoscopy, Urological, Gynecological, Orthopedic and Bariatric studies etc. and improves the productivity of your conventional R/F room while supporting high-level procedures with exceptional image quality.

- 139µm pixel superfine resolution FPD achieves outstanding image quality with advanced dose reduction features.
- The large 17 x 17-inch FPD and more than 2 meters longitudinal imaging coverage support various type of examinations very safely without moving the patient.
- Easy upgrade path to advanced imaging applications including "Tomosynthesis", "Slot Radiography" and "RSM-DSA".



### Tomosynthesis Premium Option

Tomosynthesis is the latest technology providing multiple slice clinical information from only a single tomographic scan, using lower dose than a CT scanner. The clinical benefits spotlighted now are the diagnoses of micro fractures and imaging orthopedic patients with artificial joints, which normally give rise to metal artifacts using conventional imaging methods.



Tomosynthesis image of knee joint in standing position



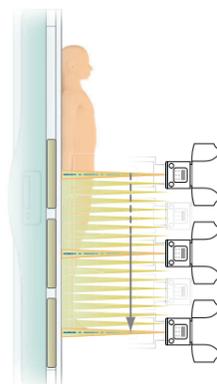
High spatial resolution with low metal artifacts

### Slot Radiography Premium Option

Slot Radiography produces a long image for full spine or full leg etc. in a simple & fast workflow. The unique "Slot Collimation" method provides highly accurate measurements, ideal for orthopedic procedures.



Slot radiography image of scoliosis



FPD R/F System

# SONIALVISION *safire17*

- Equipped with a safire direct-conversion FPD for very high-resolution imaging.
- Easy patient transfer with the table lowering down to just 47cm above the floor. Wide and strong tabletop suitable for bariatric procedures, accepting patients of up to 318kg.
- Ready to upgrade with the advanced imaging applications including "Tomosynthesis", "Slot Radiography" and "RSM-DSA".



Local-controlled Undercouch R/F system

# FLUORO *speed*

- Incorporating of the latest DR imaging expands this system's capability to include digital examinations, ranging from GI to angiographic studies at the highest image quality.
- A digital spot tower is easy to operate and can be freely manipulated for a high-speed workflow.
- Utilizing state-of-the-art system engineering and technology, this system's compact design reduces both installation space and costs.



Digital R/F System

# SONIALVISION **VERSA 100R/100**

- Head-to-toe coverage from the imaging unit's full longitudinal sliding range at any tilting angle ensures procedures are safe and easy.
- A strong, heavy-duty platform is extremely valuable for bariatric imaging, currently one of the most serious concerns all over the world.
- A perfectly flat tabletop simplifies patient movement and provides the optimal examination environment.



R/F System

# FLEXAVISION F3 package

# FLEXAVISION HB/FD/SF package

FLEXAVISION F3 package is based on a dynamic 14 x 17 inch (35 x 43 cm) flat panel detector (FPD), which is used for both fluoro and DR imaging.

The large size FPD supports all your routine requirements, including thoracic, abdominal, orthopedics, pediatrics and gastrointestinal examinations.

- The FPD\* is detaches from the table making it available for general radiography with a wall stand, on the tabletop or anywhere within the examination room.
- Extending the X-ray tube to 1.5m, the optional elevating table and oblique X-ray projection expands the flexibility of this unique system.

\* F3 package only



I.I. type FLEXAVISION HB/FD/SF package



FLEXAVISION F3 package with a portable FPD

FLEXAVISION HB/FD/SF are the I.I. based systems, providing a wide range of choices in functionality and system configuration, which allows you to select the optimal solution for your individual needs.

Surgical Mobile C-arm system

# OPESCOPE ACTENO

- A fully balanced C-arm and the unique "Doctor Handle" provide quick & light C-arm positioning and excellent operability.
- The unique Cable-free C-arm structure is ideal for use within the hygienic environment for surgery.
- 1M CCD high definition imaging with various upgrades available for your selection including the Digital Processing Unit and DSA capability for Angiography.



OPESCOPE ACTENO

General Radiography System

# RADspeed Pro

Widely acknowledged as the gold standard of general radiography systems, our RADspeed Pro systems enhance productivity, user-operability, patient comfort and safety.

- A variety of configurations to satisfy a range of customer needs.
  - X-ray tube support; Ceiling-suspended type or floor-mounted type
  - High voltage generator; 80kW, 65kW, 50kW
  - Bucky stand; Upright type, Tilting type
  - Bucky table; Height-adjustable type, Fixed-height floating type



RADspeed MF



All-in-one DR console of V4 package



RADspeed Pro V4 package

## DR NEUTRAL

Shimadzu Radiography system allows flexible DR/FPD combination to create your optimized system.



The available DR/FPD solution may vary depending on country or region.

## Patient care design

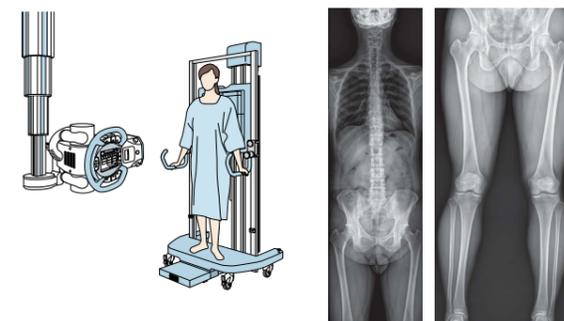
Patient friendly rubber-cushioned collimator



Dose management by Auto-Filtering and Area Dosimeter option

## Speed Stitch Premium Option

Intelligent Auto-stitching radiography provides a long leg or a whole spine image quickly, without any complicated operations.



## Auto Positioning Premium Option

The auto-positioning feature is interlocked with the APRs. Effortless tube positioning allows the operator to focus on patient care.



# RADspeed fit RADspeed fit XD package

This radiography system integrates ease-of-use features from top-class systems in a simple manner. With its high image quality due to the large output power and simple operability, this system provides a sense of ease and comfort operation for users.

- Two types of high power generator 32 / 56 kW
- Excellent usability for multi-purpose examinations.
  - Wide range X-ray tube column movement
  - 4 way floating table
  - X-ray tube column swivel
- XD package - The RADspeed fit can be upgraded to a digital system suited to your expansion plans.



RADspeed fit

## Light Weight Wireless FPD

XD1417S portable detector is light weight FPD weighing as little as 2.8kg(6.1lbs) and supports wireless networking which transmits captured images to the console.

### XD1417S

- 14x17inch Wireless Flat Panel Detector, Scintillator CsI
- Weight 2.8kg(6.1lbs)
- Lithium-ion Capacitor Battery



XD package



X-ray tube column swivel

## Compact Radiography System



- This system's space-saving compact design requires a minimum of only 2.7 m x 1.8 m.
- A one-touch guide assists the operator for optimum productivity.
- Easily accommodated in a variety of locations, this system can be operated using only houseline 100V - 240V AC power.



## Digital Mobile X-ray System

# MobileDaRt Evolution

Shimadzu is the pioneer of DR mobile systems. Combining our excellent mobile X-ray unit with a variety of wireless FPD choices, MobileDaRt Evolution provides ideal workflow and clinical functionality for ward rounds, emergency rooms or the pediatric NICU.

- The 32kW high-power generator is designed to give the maximum performance and excellent image quality minimizing motion blur even with difficult patients, pediatrics or emergency cases.
- The latest EFX version system achieves immediate image display on the monitor in 2 sec. after exposure.
- The wireless FPD makes handling easier with various types and sizes to assist the needs of clinical environment.



EFX-version



Display sample for EFX-version

## Mobile X-ray System

# MobileArt Evolution MobileArt eco

- The MobileArt series provides both superb ease-of-use and high-quality images. A wealth of functions make mobile imaging simple and easy.
- The motor-driven type, MobileArt Evolution offers generator power choice, Max 32kW or 12.5kW. 32kW-type is ready for DR upgrade.
- A manual-drive model of the MobileArt eco is also available.



MobileArt Evolution

MobileArt eco

Cardiac & Angiography System

R/F System

Radiography

Mobile X-ray System

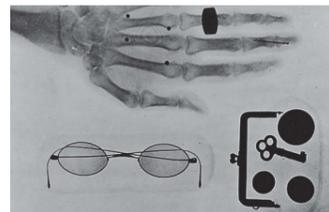
Cardiac & Angiography System

R/F System

Radiography

Mobile X-ray System

Since 1875, Shimadzu has continued to open up new frontiers in various fields of science and technology with our corporate philosophy: "Contributing to Society through Science and Technology". These are our milestones in the medical imaging fields.



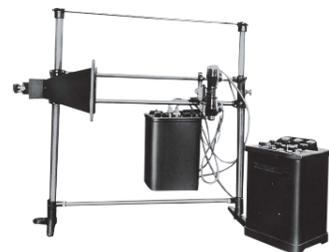
Radiographs taken at Shimadzu (First in Japan)



Diana



Polestar



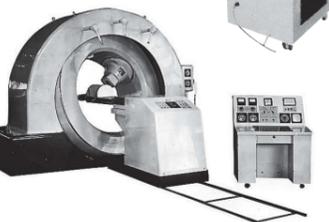
Fluorographic apparatus for mass examination



X-ray car



Scintiscanner



1896

Succeeded in taking X-ray pictures (First in Japan)

1909

Japan's first medical X-ray system  
Shimadzu completed and installed Japan's first medical X-ray system at a hospital in Chiba prefecture (today's National Center for Global Health and Medicine).

1918

X-ray apparatus "Diana"  
Mechanical full-wave rectification system, with a capacity of 120kVp and 100mA. Dominated Japan's radiography industry at that time.

1922

Deep therapy apparatus "Jupiter"  
Mechanical rectification type provided with two main transformers and two rectifiers.

1924

Electrical rectifier type X-ray high voltage generator "Polestar" and "Juno"  
Both used Kenotron high voltage rectifiers.

1931

Portable X-ray apparatus "Daigo", the full shockproof X-ray unit  
In those days, most X-ray units which radiated tens of thousands of volts were not covered, and their handling was sorely conducted in a dark room. This apparatus was a pioneer of the shockproof type.

1935

Diagnostic X-ray apparatus "Katsura"

1937

Diagnostic X-ray apparatus "Hokoku"  
These units conformed to the laws relating to shockproof and X-ray proof specifications. The X-ray tube was cooled by oil circulating in a tank, and the high voltage generator was enclosed in the oil tank together with the rectifier and the transformer. This was a full wave rectification system.

1938

Fluorographic apparatus for mass examination  
Used for chest examinations to detect tuberculosis.

1941

X-ray car  
X-ray car with X-ray apparatus mounted on it for mass screening.

1955

Betatron for medical use  
Japan's first Betatron with 6 MeV for medical use.

1957

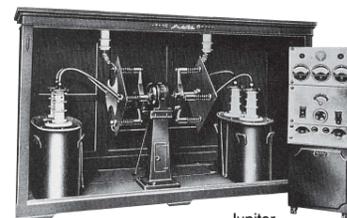
Doble rotational type Co<sup>60</sup> therapeutic apparatus "RT-2000" Scintiscanner  
After administering iodine<sup>131</sup> to a human body, the gamma-rays emitted outside the body from the radioisotope were detected by a sodium iodine scintillator.

1961

Remote-controlled X-ray TV system  
Control of all operations was possible from another room, and the radiologist was freed from the risk of being exposed to exposure. World's first system.



Large-size medical X-ray apparatus (1911)



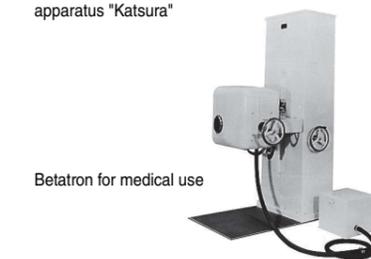
Jupiter



Portable X-ray apparatus "Daigo"



Diagnostic X-ray apparatus "Katsura"



Betatron for medical use



Remote controlled X-ray TV system



Ralstron-20B



MEDISCREEN



PANGIOMAX



Cvision



MobileDaRt



Trinias

1965

SCI-201, a compact ECG unit  
Developed SCI-201, the world's smallest and lightest ECG unit (2.2kg).

1968

Ralstron-20B, a remote control after-loading radiotherapy unit  
Used for intra-cavity treatment by introducing cobalt-60 into the body cavity.

1968

MS-1 cassetteless X-ray TV unit was completed.

1969

Zoom image amplifier  
Continuous zooming was made possible for the first time in the world from a 11-inch to a 5-inch viewing field. Winner of Ohm's Award for 1971.

1973

"MEDISCREEN" automatic multiphasic health testing system

1978

SCT-100N X-ray CT scanner for head

1980

Completed "PANGIOMAX" stereoscopic magnification system for cerebral and abdominal angiography.

1985

SMT-50, a superconducting MRI system of 0.5 T, was put on sale.

1990

Developed the elevating remote-controlled cassetteless R/F system SHIMAVISION 3500 (first in the world).

1992

Developed the IDR-1000 digital radiographic system.

1996

Developed the Cvision multi functional digital C-arm table.

2001

Developed the Sonialvision multi-functional digital R/F system.

2003

Developed digital cardiac system HeartSPEED safire incorporating direct-conversion FPD first in the world.

2005

Developed digital Mobile X-ray system MobileDaRt, incorporating a portable FPD first in the world.

2007

Developed digital angiography system BRANSIST safire incorporating 17 x 17-inch direct-conversion FPD.

2010

Developed digital Mobile X-ray system MobileDaRt Evolution with multiple FPD choices.

2011

Developed digital R/F system FLEXAVISION F3 with a portable R/F FPD.

2013

Developed digital angiography system Trinias with realtime SCORE StentView technology first in the world.

2014

Developed digital Universal R/F system SONIALVISION G4 with Slot Radiography and Tomosynthesis technology first in the world.

2015

Developed RADspeed Pro EDGE Package with Speed Stitch, Tomosynthesis and Dual Energy Subtraction technology.



MS-1



SCT-100N



SHIMAVISION-3200



HeartSPEED safire



SONIALVISION G4



RADspeed Pro EDGE Package

Founded in 1875, Shimadzu Corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. We maintain a global network of sales, service, technical support and applications centers on six continents, and have established long-term relationships with a host of highly trained distributors located in over 100 countries. For information about Shimadzu, and to contact your local office, please visit our Web site at [www.shimadzu.com](http://www.shimadzu.com)



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Shimadzu Corporation Medical Systems Division has been certified by TÜV Rheinland as a manufacturer of medical systems in compliance with ISO9001:2008 Quality Management Systems and ISO13485:2003 Medical Devices Quality Management Systems.

### Remarks:

- Every value in this catalogue is a standard value, and it may vary a little from the actual at each site.
- The appearances and specifications are subject to change for reasons of improvement without notice.
- Certain configurations may not be available pending regulatory clearance. Contact your Shimadzu representative for information on specific configurations.
- Before operating this system, you should first thoroughly review the Instruction Manual.