Diagnostic Ultrasound System MODEL: PROSOUND α 7

prosound α7 Cardiovascular

ALOKA-An Environmentally Friendly Company

- The specifications, shape and color of this product are subject to change without notice.
- The standard components and optional items vary depending on the country.

We strive to provide quality products and services for our customers.

We operate with regard for the environment.

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ALOKA
illuminate the change

Powerful, Friendly and Compact Ultrasound System

The ProSound α7 is a diagnostic ultrasound system that contradicts the thought that high-performance systems are large. It inherits the proven technologies and functions of Aloka's high-end product, yet offers outstanding mobility thanks to being the smallest size in its class. The system is easily transported to deliver high performance throughout the hospital.

The Broadband Harmonics realizes high sensitivity that is comparable to fundamental imaging even with Harmonic Echo imaging.
Directional *e*FLOW features enhanced spatial resolution for greater detail of blood flow information.

The system offers comprehensive cardiovascular examination functions and highly specialized analysis capabilities useful from prevention to treatment. These functions and capabilities include *e*TRACKING for evaluating early atherosclerosis, A-SMA and Strain/Strain rate for evaluating ischemic cascade, and various asynchrony evaluation functions for Cardiac Resynchronization Therapy (CRT).

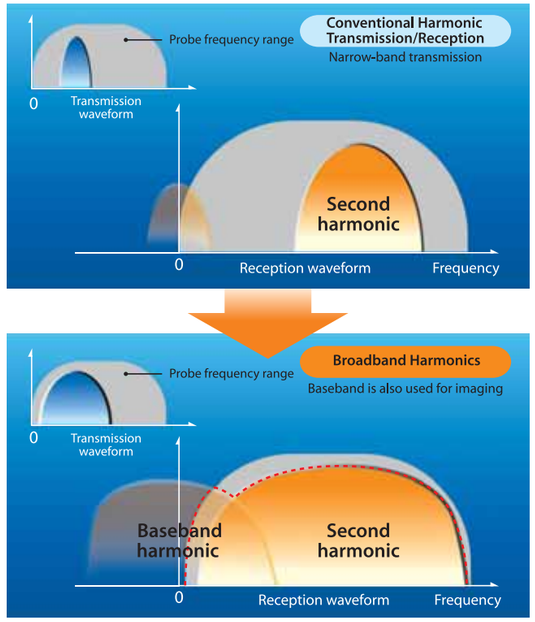
Significant effort was exerted to create a system that would alleviate user fatigue and increase patient throughput by applying universal design.
The use of ecologically friendly materials, low power consumption and low noise design makes the unit environment friendly.

High-performance for Easier Diagnosis

The ProSound α7, following the design concept of the higher-end models, provides images of excellent contrast and spatial resolution.
Fewer side lobes and higher signal-to-noise ratio reduces unnecessary information on the images, making the diagnosis easier.

Broadband Harmonics

The ProSound α7 has successfully achieved both high penetration and spatial resolution not only in the fundamental imaging but also in the Harmonic Echo imaging. In addition to the advantageous effect of harmonic imaging—reduction of artifacts caused by side lobes and multiple echoes, more detailed image information and deeper penetration are available.



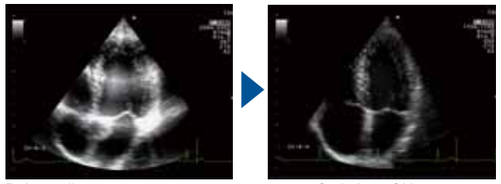
●Directional eFLOW(D-*e*FLOW)

Displays high-resolution blood flow with directional information.

Compared with conventional blood flow display methods, D-*e*FLOW features enhanced spatial and time resolutions for greater detail. Blood flow can be displayed separately from tissues with little overlapping.
Furthermore, D-*e*FLOW uses color to differentiate blood vessels according to the direction of flow, facilitating discrimination of blood vessels.

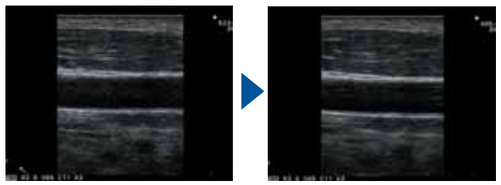
●Image Optimizer

Instantly optimizes the brightness of the entire B-mode image. The user is freed from frequent image adjustments during examination, resulting in enhanced examination efficiency. The system automatically learns the gain value setting so that the user's favorite brightness setting is always reflected in this optimization.


Before adjustment　　Image Optimizer: ON

●Edge Optimizer

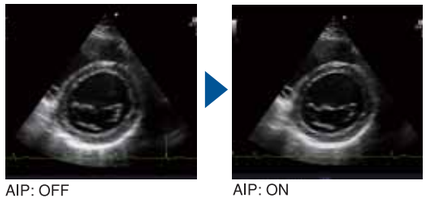
The Edge Optimizer reduces speckle noise and emphasizes the tissue boundary to provide crisp images. The vessel intima and pericardia, in particular, are depicted with good continuity.


Soft image　　Hard image

●Adaptive Image Processing(AIP)

For speckle reduction

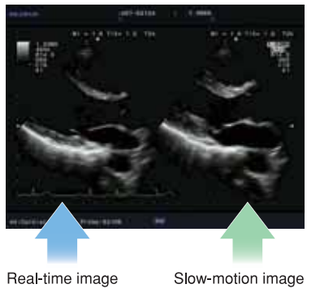
AIP clearly displays differences in tissues, reducing speckle noise while maintaining the frame rate. It can also display outlines more clearly by selectively emphasizing boundaries.


AIP: OFF　　AIP: ON

●D.S.D. (Dynamic Slow-motion Display)

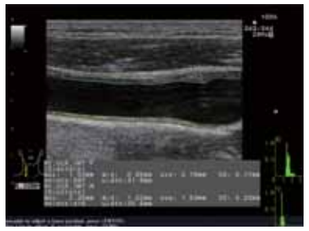
Eases obsevation of objects moving fast

It is possible to display a real-time image and slow-motion image side by side. For example, while a real-time image of 2 cardiac cycles is displayed, it is possible to display a slow-motion image of 1 cardiac cycle at a half speed (the image is refreshed at the R waves of ECG).


Real-time image　　Slow-motion image

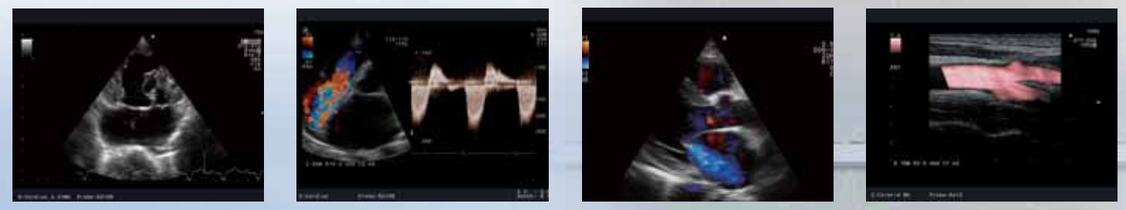
●IMT (Intima-media Thickness) automated measurement

It is possible to automatically extract max IMT and mean IMT only by setting ROI (region of interest) on a long-axis view of the vessel.



Comprehensive Cardiovascular Examination

From Preventive Medicine to Treatment

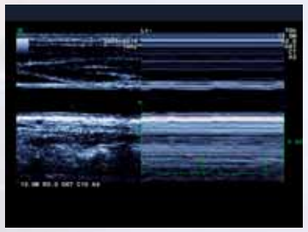


*e*TRACKING (Echo Tracking)
—For Early Detection of Atherosclerosis and Global Cardiovascular Analysis

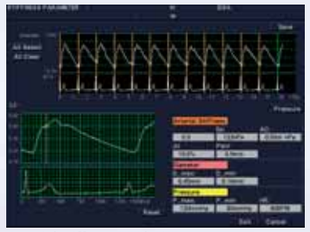
*e*TRACKING achieves measurements of the vessel diameter with precision as high as 0.01 mm in real time by using RF (Radio Frequency) signals.

● Arterial Stiffness

Multiple parameters necessary for evaluation of early atherosclerosis are obtained by one single measurement.
Quantitative assessment of arterial stiffness is feasible before the onset of organic changes, such as vessel wall thickening and plaque formation.



*e*TRACKING measurement screen



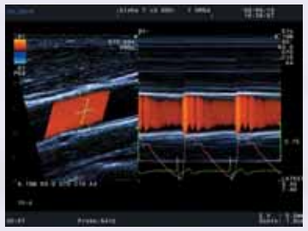
Arterial stiffness analysis screen

● FMD (Flow Mediated Dilatation)

Endothelial dysfunction is considered to be the first stage of atherosclerosis. FMD analysis is generally known as an effective means to evaluate endothelial dysfunction noninvasively and said to be useful for early detection of atherosclerosis and determining efficacy of treatment. The FMD analysis can continually record and plot the whole processes from baseline through occlusion and vasodilatation to recovery, assuring that the true vasodilatation peak will never escape detection. Percent FMD and other parameters are automatically calculated immediately after the recording is complete.

● WI (Wave Intensity)

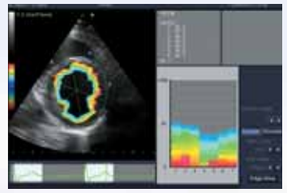
The heart and the arterial system are acting, constantly interfering with each other through forward traveling waves and reflected waves.
WI is calculated based on changes in blood pressure and flow velocity obtained at an arbitrary point in a circulatory system.
WI is a new indicator of blood flow dynamics, which is expected to help pave the way for analysis of the interference between the heart and the arterial system.
The analysis comprises of contraction and dilatation characteristics, influence of reflected waves from peripherals, and an index related to time.



Evaluation of Ischemic Cascade

● KI/A-SMA

The endocardium is automatically detected with our unique algorithm. Wall motion is visualized easily because the moving part of the cardiac wall is displayed in color.
Wall motion is quantified by the change in cross-sectional area of the cardiac cavity.
The better the wall movement, the larger the change in area. By dividing the cavity into 2 to 6 segments, it is possible to analyze the wall motion in each region served by their respective coronary arteries. Time resolution is enhanced considerably to up to 90 frames/s, enabling more detailed analysis of myocardial movement.

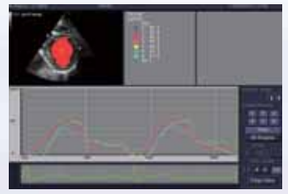


Histogram Mode

The rates of change in area for individual segments are plotted in a histogram.
This mode is useful for evaluating not only systolic but also diastolic function by switching the display of time phase.

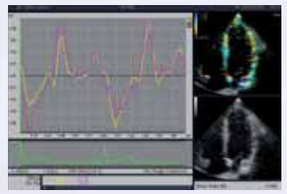
Line Graph Mode

In the line graph mode, change in area over time is visualized and quantified for all time phases of a cardiac cycle. Detailed information is available by switching the parameters displayed on the screen.



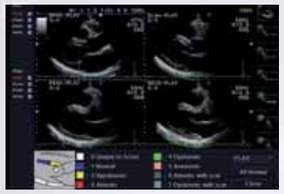
● Strain/Strain Rate

Translation and tethering must not be ignored for correct evaluation of myocardial motion. Strain analysis is used to examine the cardiac function by measuring the elongation and shrinkage of the regional myocardium between two designated points. Strain analysis is attracting attention recently because it is less affected by translation and tethering. You can carry on analysis while making sure that the ROI position/strain length are adequately set and working by checking the ROI that automatically follows by velocity tracking and the SR marks.



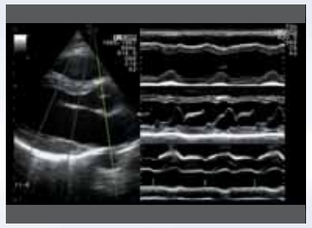
● Stress Echo

The large-capacity CineMemory enhances the efficiency of examination. You can capture moving images for about five continuous minutes in the standard display format. You can perform complex Stress Echo examinations smoothly by pressing a single switch to acquire a series of images.



Contribution to Cardiac Resynchronization Therapy (CRT) by Asynchrony Evaluation

By quantitatively evaluating asynchrony before performing a CRT operation, you can estimate to some extent whether the patient is a responder or non-responder to the CRT treatment. Asynchrony evaluation is also useful for determining the effect of the operation performed.



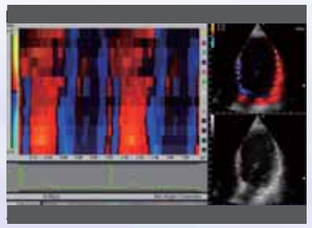
FAM (Normal case)

● FAM (Free Angular M-mode)

Three M-mode cursors can be set at any position and angle simultaneously, thus eliminating the labors required with conventional ultrasound systems for correct measurement. Wall motion at different positions can be compared simultaneously, making it possible to accurately identify the region of delayed systole.

● TDI (Tissue Doppler Imaging)

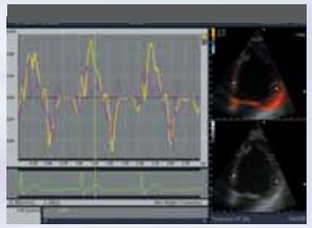
Tissue Doppler Imaging (TDI) is now widely used for visualizing the velocity and direction of myocardial movement. Various analysis methods can be selected from among Velocity Profile, Strain/Strain Rate, Myocardial Thickness, and so on according to the purpose of examination, enabling you to examine heart function from multiple aspects.



TDI (Normal case)

Automatic ROI follow-up

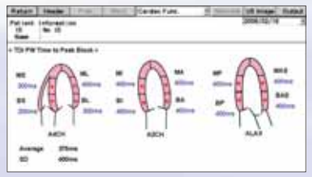
Once a ROI is set on the myocardium, the ROI automatically follows the motion of the cardiac walls and remain in the same region of the myocardium at any time phase of a cardiac cycle. This makes it possible to detect the velocity of wall motion correctly.



A case of asynchrony:
The peak of systolic velocity of the septum (yellow) lags behind the lateral wall (pink).

● Asynchrony Measurement

Thanks to its high frame rate, α7 can perform high-precision temporal analysis in M-mode, D-mode and TDI.
It offers various parameters necessary for evaluation of atrioventricular, inter-ventricular and intra-ventricular asynchrony as one Study.



Asynchrony measurement report

Aloka's Transesophageal probes are kind to the patient

The small-diameter probes are easy to insert.

When you want to observe regions that are difficult to observe by trans-thoracic scanning or when you want to monitor a patient during and after an operation, transesophageal probes are the tool of choice. Aloka has developed transesophageal probes with high imaging performance and with a small diameter.

Rotary-plane Transesophageal Probe
UST-5293-5

The knob on the manipulator turns the transducer at the tip. Images of sections are displayed within the turning range.

Pediatric Rotary-plane TEP
UST-52119S

While almost as thin as conventional pediatric TEPs, this item features a mechanism that allows the knob on the manipulator to rotate the transducer.

Neonatal Transesophageal Probe
UST-52110S

The Neonatal TE probe is just 4.8mm in diameter yet produces higher quality images than conventional TE probes because of the finer transducer pitch and the increased number of elements.

Note : Some models may not be available in certain countries.

In Pursuit of Friendliness to User, Patient and Environment

User-friendly universal design

- User-customizable panel switches
- Frequently-used keys are arranged around the trackball.
- Images can be easily frozen thanks to the integration of the gain knob and freeze switch.
- The Flow, PW and M-mode control and gain features can be selected with the use of a single control.
- Menu items can be arranged to individual likings on the large (10.4 inches) LCD touch panel.
- Virtual keyboard for making entries via the touch panel
- Retractable keyboard stored under the operation panel

The document tray, convenient for holding clinical charts and other documents, can be mounted in place of the standard keyboard.

The small and lightweight body is easy to move

The unit is equipped with four swivel casters for turning in a small radius. The unit is easy to move from examination room to the patient's bed side in the ward, CCU, ICU and operating theater.

Measuring only 49 cm wide x 79 cm deep, the unit fits in a limited space.

Protocol Assistant

For smoother examination with no missing recorded images!

Smooth examinations are performed according to the pre-registered protocol (procedures).
By using the check function, it is possible to avoid forgetting to capture and/or measure images.

- Parts to be examined are registered with body marks and annotations.
- Measurement can also be registered as necessary.
- Registered protocols are displayed on the touch panel, enabling the user to check the progress of examination at any time.
- The acquired (recorded) sections are check-marked.
- A message appears if the user attempts to end the examination before completing all the registered procedures.

Remote Controller

Compact and Lightweight, Simple to Use, yet Multifunctional

- The main body of the remote controller is compact and light enough to fit easily in your breast pocket (40×90×10 mm thick; about 50 g). It comes with a neck strap.
- As the menu for the remote controller is displayed on the main screen, the controller can be manipulated while viewing images.
- The controller can control many functions including display mode switching, image adjustment, image freezing and various measurements.
- Can be used in the operating theater by placing it in a sterilized bag.

(Nearly the actual size)

Function menu for remote controller

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●Directional *e*FLOW (D-*e*FLOW)

Displays high-resolution blood flow with directional information.

Compared with conventional blood flow display methods, D-*e*FLOW features enhanced spatial resolution for greater detail. Blood flow can be displayed separately from tissues with little overlapping.
It visualizes blood flow dynamics ranging from thin and low-speed flow at the tip of a finger, to thick and high-speed flow more faithfully.

●Image Optimizer

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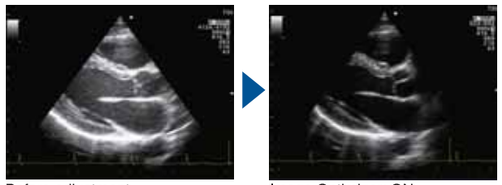

Before adjustment　　Image Optimizer: ON

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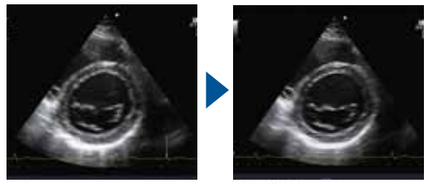

AIP: OFF　　AIP: ON

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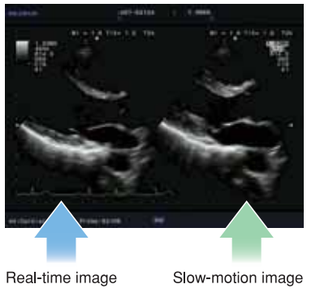

Real-time image　　Slow-motion image

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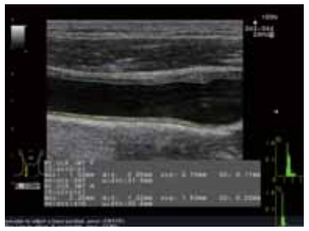
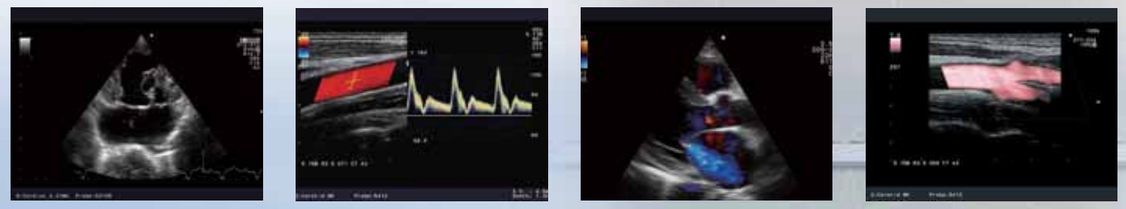


Comprehensive Cardiovascular Examination

From Preventive Medicine to Treatment



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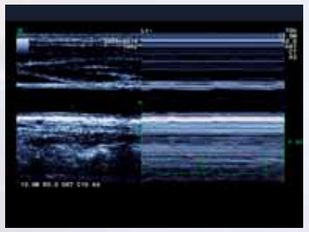
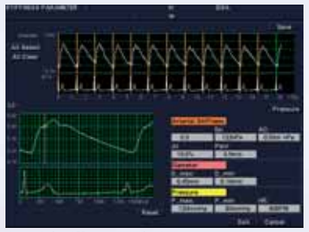


*e*TRACKING measurement screen



Arterial stiffness analysis screen

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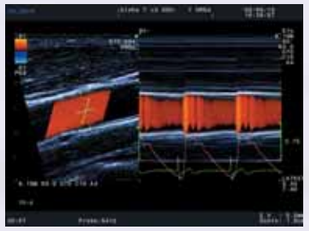

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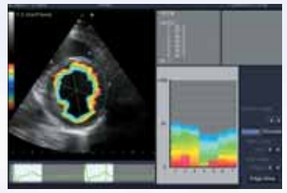

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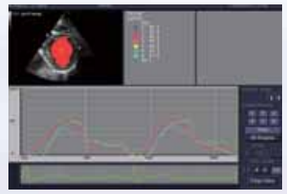
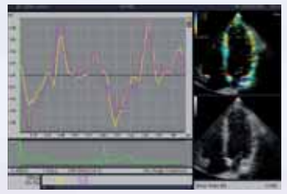


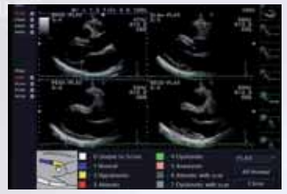
● Strain/Strain Rate

Translation and tethering must not be ignored for correct evaluation of myocardial motion. Strain analysis is used to examine the cardiac function by measuring the elongation and shrinkage of the regional myocardium between two designated points. Strain analysis is attracting attention recently because it is less affected by translation and tethering. You can carry on analysis while making sure that the ROI position/strain length are adequately set and working by checking the ROI that automatically follows by velocity tracking and the SR marks.



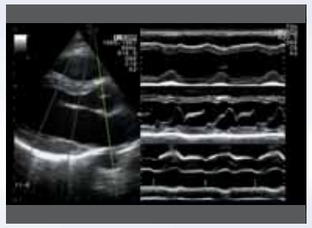
● Stress Echo

The large-capacity CineMemory enhances the efficiency of examination. You can capture moving images for about five continuous minutes in the standard display format. You can perform complex Stress Echo examinations smoothly by pressing a single switch to acquire a series of images.



Contribution to Cardiac Resynchronization Therapy (CRT) by Asynchrony Evaluation

By quantitatively evaluating asynchrony before performing a CRT operation, you can estimate to some extent whether the patient is a responder or non-responder to the CRT treatment. Asynchrony evaluation is also useful for determining the effect of the operation performed.



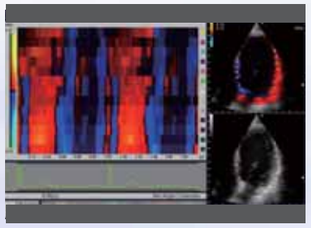
FAM (Normal case)

● FAM (Free Angular M-mode)

Three M-mode cursors can be set at any position and angle simultaneously, thus eliminating the labors required with conventional ultrasound systems for correct measurement. Wall motion at different positions can be compared simultaneously, making it possible to accurately identify the region of delayed systole.

● TDI (Tissue Doppler Imaging)

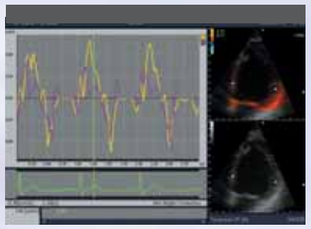
Tissue Doppler Imaging (TDI) is now widely used for visualizing the velocity and direction of myocardial movement. Various analysis methods can be selected from among Velocity Profile, Strain/Strain Rate, Myocardial Thickness, and so on according to the purpose of examination, enabling you to examine heart function from multiple aspects.



TDI (Normal case)

Automatic ROI follow-up

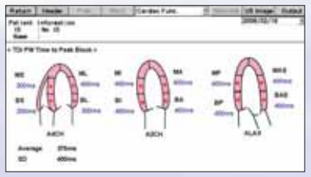
Once a ROI is set on the myocardium, the ROI automatically follows the motion of the cardiac walls and remain in the same region of the myocardium at any time phase of a cardiac cycle. This makes it possible to detect the velocity of wall motion correctly.



A case of asynchrony:
The peak of systolic velocity of the septum (yellow) lags behind the lateral wall (pink).

● Asynchrony Measurement

Thanks to its high frame rate, α7 can perform high-precision temporal analysis in M-mode, D-mode and TDI.
It offers various parameters necessary for evaluation of atrioventricular, inter-ventricular and intra-ventricular asynchrony as one Study.



Asynchrony measurement report

Aloka's Transesophageal probes are kind to the patient

The small-diameter probes are easy to insert.

When you want to observe regions that are difficult to observe by trans-thoracic scanning or when you want to monitor a patient during and after an operation, transesophageal probes are the tool of choice. Aloka has developed transesophageal probes with high imaging performance and with a small diameter.

Rotary-plane Transesophageal Probe
UST-5293-5

The knob on the manipulator turns the transducer at the tip. Images of sections are displayed within the turning range.

Pediatric Rotary-plane TEP
UST-52119S

While almost as thin as conventional pediatric TEPs, this item features a mechanism that allows the knob on the manipulator to rotate the transducer.

Neonatal Transesophageal Probe
UST-52110S

The Neonatal TE probe is just 4.8mm in diameter yet produces higher quality images than conventional TE probes because of the finer transducer pitch and the increased number of elements.

Note : Some models may not be available in certain countries.

Streamline Your Workflow

Menu items can be customized to individual likings on the large (10.4 inches) LCD touch panel. Virtual keyboard can be displayed on the touch panel.

The Flow, PW and M-mode control and gain features can be selected with the use of a single control.

Images can be easily frozen thanks to the integration of the gain control and freeze switch.

Retractable keyboard

Document tray

- The control panel can be turned horizontally and is height adjustable.
- The control panel is intuitive and has user-customizable panel switches.
- Image Optimizer instantly optimizes the brightness of the entire B-mode image.
- Retractable keyboard stored under the operation panel
- The document tray, convenient for holding documents, can be mounted in place of the standard keyboard.

Protocol Assistant

For smoother examination with no missing recorded images!

Smooth examinations are performed according to the pre-registered protocol (procedures).
By using the check function, it is possible to avoid forgetting to capture and/or measure images.

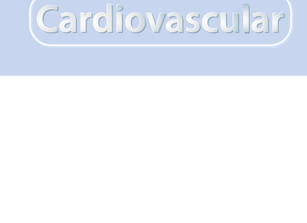
- Parts to be examined are registered with body marks and annotations.
- Measurement can also be registered as necessary.
- Registered protocols are displayed on the touch panel, enabling the user to check the progress of examination at any time.
- The acquired (recorded) sections are check-marked.
- A message appears if the user attempts to end the examination before completing all the registered procedures.

Remote Controller

Compact and Lightweight, Simple to Use, yet Multifunctional

- The main body of the remote controller is compact and light enough to fit easily in your breast pocket (40×90×10 mm thick; about 50 g). It comes with a neck strap.
- As the menu for the remote controller is displayed on the main screen, the controller can be manipulated while viewing images.
- The controller can control many functions including display mode switching, image adjustment, image freezing and various measurements.
- Can be used in the operating theater by placing it in a sterilized bag.

(Nearly the actual size)



Function menu for remote controller

Diagnostic Ultrasound System MODEL: PROSOUND α7

HITACHI
Inspire the Next

ALOKA
illuminate the change

prosound α7

- Real-time Tissue Elastography is a registered trademark or trademark of Hitachi Medical Corporation in Japan and other countries.
- The specifications, shape and color of this product are subject to change without notice.
- The standard components and optional items vary depending on the country.

We strive to provide quality products and services for our customers.

We operate with regard for the environment.

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www.hitachi-aloka.com

Printed in Japan 2012-2 E313 ③ (K)

Powerful, Friendly and Compact Ultrasound System

The ProSound α7 is a diagnostic ultrasound system that contradicts the thought that high-performance systems are large. It inherits the proven technologies and functions of our high-end product, yet offers outstanding mobility thanks to being the smallest size in its class. The system is easily transported to deliver high performance throughout the hospital.

The Broadband Harmonics realizes high sensitivity that is comparable to fundamental imaging even with Harmonic Echo imaging. *e*FLOW features enhanced spatial resolution for greater detail of blood flow information.

The comprehensive cardiovascular analysis functions, including *e*TRACKING for evaluation of early atherosclerosis, contribute from prevention to treatment.
The 3D Automated Volume Measurement (AVM) requires no manual tracing for accurate 3D volume calculation. Contrast Harmonic Echo (CHE) is compatible with all high-, medium- and low-sound pressure contrast agents. With these versatile functions, the ProSound α7 is the ideal choice for expert analyses in a wide range of applications

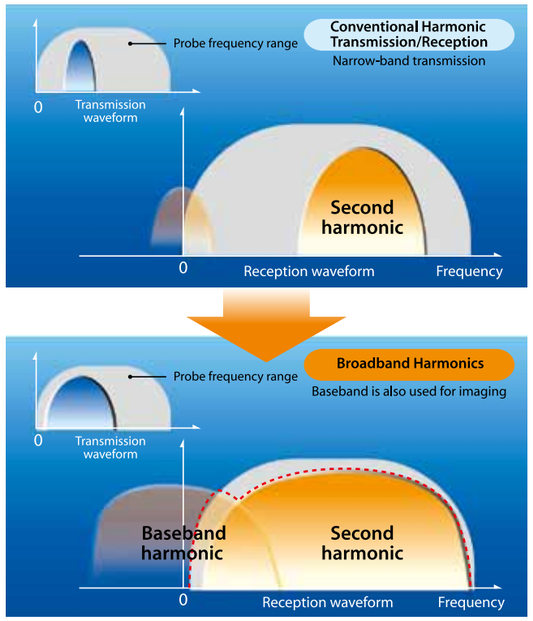
Significant effort was exerted to create a system that would alleviate user fatigue and increase patient throughput by applying universal design.
The use of ecologically friendly materials, low power consumption and low noise design makes the unit environment friendly.

High-performance for Easier Diagnosis

The ProSound α7, following the design concept of the higher-end models, provides images of excellent contrast and spatial resolution.
Fewer side lobes and higher signal-to-noise ratio reduces unnecessary information on the images, making the diagnosis easier.

Broadband Harmonics

The ProSound α7 has successfully achieved both high penetration and spatial resolution not only in the fundamental imaging but also in the Harmonic Echo imaging. In addition to the advantageous effect of harmonic imaging—reduction of artifacts caused by side lobes and multiple echoes, more detailed image information and deeper penetration are available.



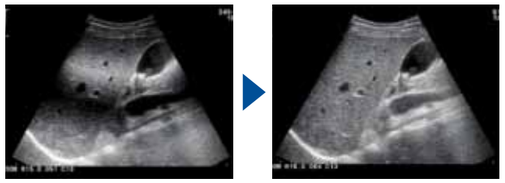
● *e*FLOW

Displays high-resolution blood flow with directional information.

Compared with conventional blood flow display methods, *e*FLOW features enhanced spatial and time resolutions for greater detail. Blood flow can be displayed separately from tissues with little overlapping.
Furthermore, *e*FLOW uses color to differentiate blood vessels according to the direction of flow, facilitating discrimination of blood vessels.

●Image Optimizer

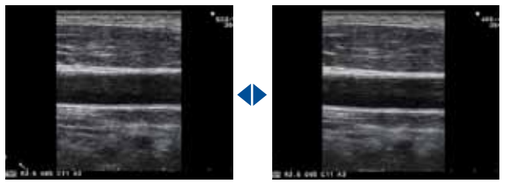
Instantly optimizes the brightness of the entire B-mode image. The user is freed from frequent image adjustments during examination, resulting in enhanced examination efficiency. The system automatically learns the gain value setting so that the user's favorite brightness setting is always reflected in this optimization.



Before adjustment　　Image Optimizer: ON

●Edge Optimizer

The Edge Optimizer reduces speckle noise and emphasizes the tissue boundary to provide crisp images. The vessel intima and pericardia, in particular, are depicted with good continuity.

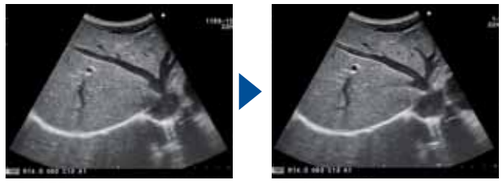


Level 1 (Soft image)　　Level 8 (Hard image)

●Adaptive Image Processing (AIP)

For speckle reduction

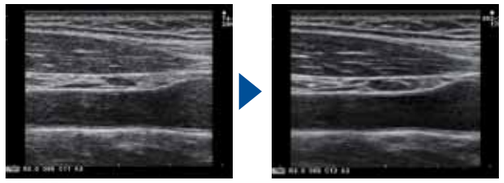
AIP clearly displays differences in tissues, reducing speckle noise while maintaining the high frame rate. It can also display outlines more clearly by selectively emphasizing boundaries.



AIP: OFF　　AIP: ON

●Spatial Compound Imaging (SCI)

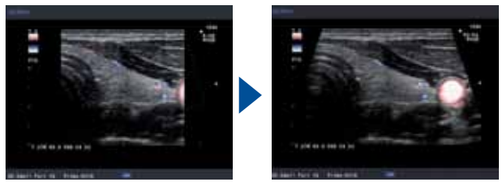
Offers enhanced capability for depicting sidewall structures of tubular cavities and the like by superposing images created by steering the ultrasound beam in multiple directions. Speckle patterns of the parenchyma of organs are depicted much smaller while reducing artifacts dependent on beam direction.



SCI: OFF　　SCI: ON

●Trapezoidal Scan

Images by linear probes are displayed as a trapezoidal form. This provides a wider field of view than with conventional displays, to facilitate anatomical understanding of the region of interest. Trapezoidal Scan allows users to view the peripheral areas that are difficult to observe with conventional display due to limited acoustic windows.



High Image Quality for Easier Diagnosis


Metastatic liver cancer


HCC


Biliary slugde

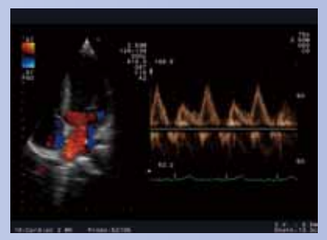

Umbilical cord


Fetal cerebral blood flow

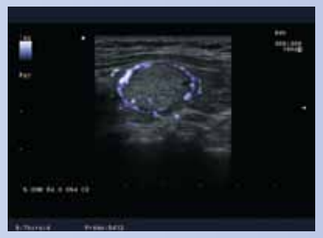

Image by 180-degree transvaginal probe


ASD


TR


PV


Axilary lymph node


Thyroid tumor

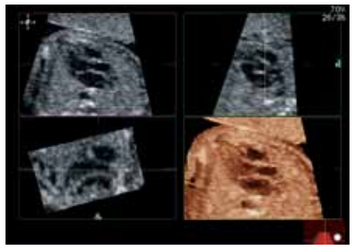

EFV image of upper extremity

Women's Healthcare

Gently Supporting the Wellness of Mother and Baby

Spatio-temporal Image Correlation (STIC)

Complete 3D volume data set of one heartbeat of the fast moving fetal heart can be constructed, enabling MPR display in a moving image.



Dynamic Slow-motion Display (DSD)

While displaying a real-time image on the left, its slow motion image can be displayed on the right side of the screen. Each movement of fast moving fetal heart with complex structure can be caught, and details can be examined.

Volume Slice Imaging (VSI)

Displaying cross-sectional images with thickness, VSI improves image quality by enhancing contrast resolution and reducing speckle noise, and enables easier 3D understanding of the target.

Detailed image of the fetal brain using VSI

Automated Nuchal Translucency (NT) Measurement

Automated NT Measurement automatically detects and measures NT thickness. Set the region of interest (ROI) on the fetal neck's mid-sagittal view, and the ProSound α7 will do the rest. This easy, quick and efficient function supports accurate diagnosis of chromosomal abnormalities such as Down syndrome.

Courtesy of: Dr. Marc Althuser, France

Real-time Tissue Elastography

Stiffness of tissues can be visualized in real time. Using Strain Ratio Measurement to calculate the ratio of 2 areas of your choice, the ratio of stiffness between fat and region of interest (FLR: Fat Lesion Ratio) can be obtained.

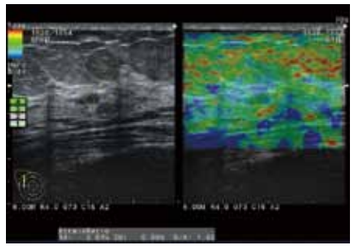
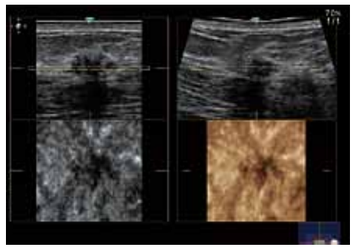


Image of the breast

Small part 3D Imaging

High resolution volume data of superficial areas such as the breast can be acquired using the high-frequency linear 3D probe.

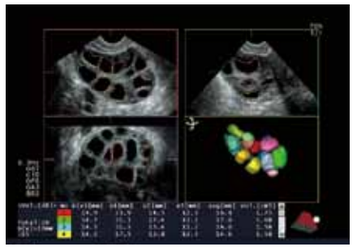


Courtesy of:
Prof. WANG Yi,
Huashan Hospital,
Fudan University,
Shanghai, China

Breast image of lesion pulling in its surrounding tissues, using VSI

Multi-follicle Volume (MFV)

Multiple follicles can automatically be detected in 3D, and the diameter and volume of each follicle can be displayed.



Easy understanding of follicles using MFV

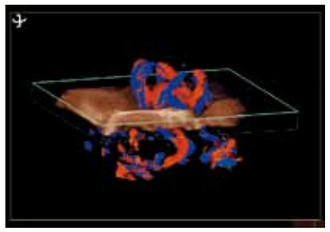
Courtesy of: Dr. Chen, Nanfang Hospital, Southern Medical University

*e*FLOW

The high resolution *e*FLOW faithfully presents blood flow in minute vessels, without overlapping of color on the tissue.

Precise reproduction of the uterine artery

Real-time 3D (4D) fetal image

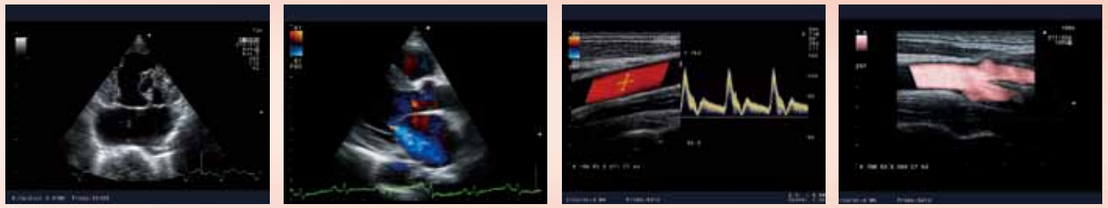


3D display of blood flow in the umbilical cord using Flow 3D

The fetal aorta using Multi-slice Imaging (MSI)

Cardiovascular

From Prevention to Diagnosis to Treatment
Quantitative Analysis Entirely Supports You



Early stage before organic change occurs

• Evaluations of endothelial function and arterial stiffness

*e*TRACKING (Echo Tracking)

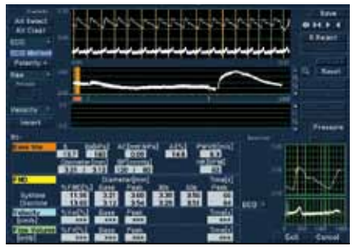
The tracking gate automatically follows vessel wall movements, measuring vessel diameter change in real time at an exceptional accuracy of 0.01 mm.

Arterial Stiffness

Parameters necessary for quantitative evaluation of early stages of atherosclerosis can be computed at once and displayed on the report. Such parameters include Beta and Ep values, Arterial Compliance (AC), Augmentation Index (AI), and one-point PWV.

Flow Mediated Dilatation (FMD)

Noninvasive method for evaluating the vascular endothelial function.



Wave Intensity (WI)

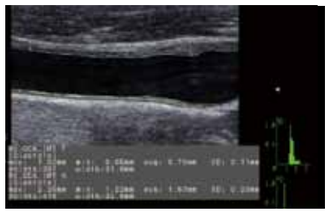
This hemodynamic index is expected to be beneficial for analyzing interaction between the heart and the vascular system.

Onset of organic change

• Measurements of IMT, flow velocity, and stenosis

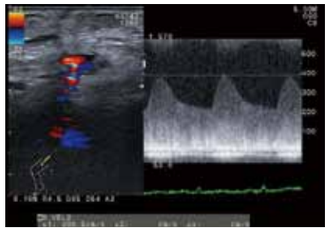
Automated Intima-media Thickness (IMT) Measurement

Simply by setting the ROI on a vessel's longitudinal image, max and mean IMTs can be automatically computed.



CW Doppler by the Linear Probe

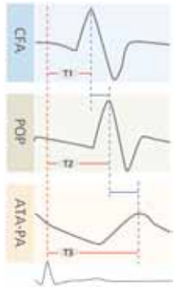
Faster blood flows can now be observed with the linear probe without having to change to a sector probe. Stenotic blood flow in superficial areas can sensitively be detected, with excellent image quality and wide field of view.



Courtesy of:
Saitama Medical University
International Medical Center
Tetsuya Yamamoto
Makoto Matsumura

Transit Time of Vessel Flow (TVF)

TVF is an index for estimating stenosis and occlusion in the artery of the lower extremities. The time it takes from R wave to the peak of each blood flow waveform in 3 arteries of the lower limb, common femoral artery, popliteal artery, and ankle are automatically measured and the left-right difference is compared.

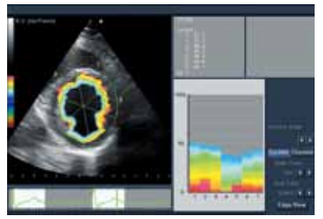


Onset of angina pectoris or myocardial infarction

• Evaluation of Ischemic Cascade

Automated Segmental Motion Analysis (A-SMA)

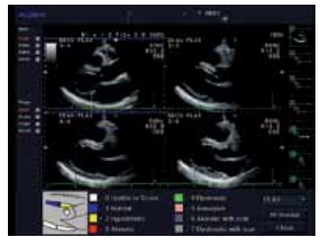
Cardiac wall movements can be quantitatively evaluated from changes in the areas of each cross section of cardiac chambers, by the automatically traced endocardiums.



Histogram display in systole

Stress Echo

With easy operation, exercise stress and pharmacological stress examinations can be performed. Simultaneous display of multiple moving images of before and after stress application contributes to evaluations of ischemia and myocardial viability.

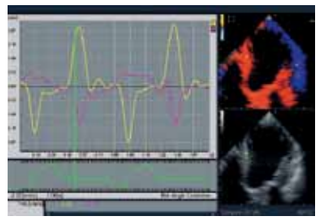


Treatment phase

• Contribution to Cardiac Resynchronization Therapy (CRT)

TDI (Tissue Doppler Imaging) Analysis

For further evaluation of regional cardiac functions, we focused on cardiac movements from the myocardia. Strain/Strain Rate, which is hardly influenced by tethering or translation, is becoming more and more recognized.



Strain Analysis using TDI

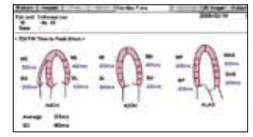
Free Angular M-mode (FAM)

In one heartbeat, cardiac wall motion in multiple areas and valves can be compared.

FAM, analyzing 3 points

Asynchrony Measurement

Various parameters necessary for dyssynchrony evaluation of between ventricle and atrium, the two ventricles, or within a ventricle are provided as one study.

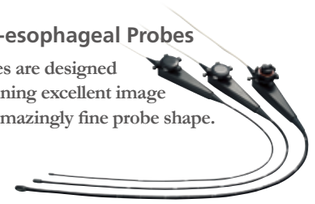


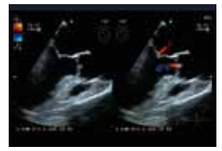
Asynchrony measurement report

Patient Friendly Trans-esophageal Probes

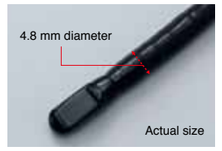
Our trans-esophageal probes are designed for patient comfort, maintaining excellent image quality and features in the amazingly fine probe shape.

- Neonatal probe
- Pediatric rotary plane probe
- Rotary plane probe





UST-5293S-5
Rotary plane probe

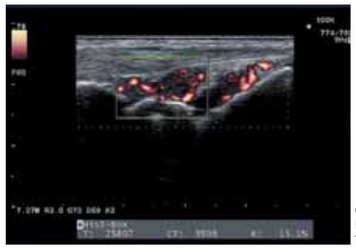


UST-52110S
Super fine probe for neonates

Musculoskeletal/Rheumatology

Ultrasound examinations are becoming more and more popular in the musculoskeletal and rheumatologic fields.

Power Doppler

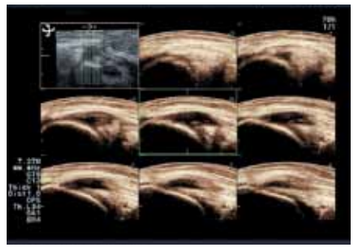


Courtesy of:
Hokkaido Medical Center
for Rheumatic Diseases

Joint Rheumatology

Bone erosion, synovial thickening, and synovial blood flow can easily be observed by simply placing the probe on your patient, over the targeted area. Quantification examinations obtained from the ratio of areas with color and without have been attracting attention as a way to evaluate disease activity.

Freehand 3D (MSI display)



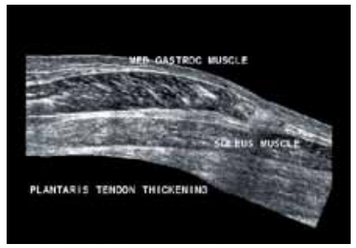
Fluid in the Knee Joint

With Freehand 3D, volume data can be obtained with a 2D probe. Observing volume data using Multi-slice Imaging (MSI) enables easy understanding of lesion spread.

High-frequency Linear Probe

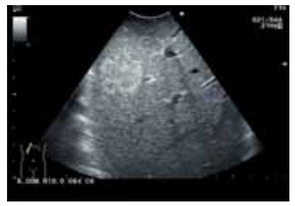
Clear depiction of the humeroradial joint

Extended Field of View (EFV)



Wide view of the lower extremity

Intraoperative



Case of hepatic hemangioma, before right hepatectomy. Displayed with marginal strong echo. Probe used: intra-operative probe, UST-9132T

Real-time Tissue Elastography

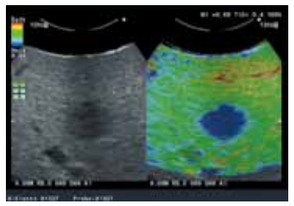
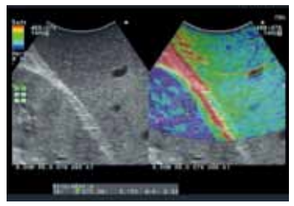


Image of metastatic hepatic cancer

Courtesy of: Dr. Yosuke Inoue & Professor Norihiro Kokudo, Graduate School of Medicine, University of Tokyo

Real-time Tissue Elastography



Strain Ratio Measurement of the liver

Courtesy of: Professor Keiji Sano, Professor of Surgery, Teikyo University School of Medicine

Abundant optional probes

As many as 50 types of optional probes, including those for routine examination and specialty use, are available.

- General abdomen
- Transvaginal
- Transrectal
- Intraoperative
- Small parts
- Biopsy
- Cardiology
- Transesophageal
- Laparoscopic
- Endoscopic ultrasound

Laparoscopic probe

Intercostal biopsy

Intraoperative
(finger-grip type)

Bi-plane trans-rectal probe

Abdominal biopsy

Intraoperative
(finger-grip type)

Endoscopic Ultrasound
(Manufactured by Olympus Medical Systems)

● Convex scanning bronchofibervideoscope

Specifically designed for real-time endobronchial ultrasound guided transbronchial needle aspiration(EBUS-TBNA). With high resolution image quality and high sensitivity Color Doppler, the system allows for safer and more accurate biopsy in the mediastinal and hilar lymph nodes for the diagnosis and staging of lung cancer.

● Radial scanning scope

The radial scanning scope covers a wide 360-degree ultrasound scanning range and supports early detection and staging of diseases. This system is equipped with Color Doppler function that is useful for differentiating blood vessels from lymph nodes by displaying moving objects with color. This function also enables easier orientation in the pancreatobiliary region.

● Convex scanning scope

The convex scanning scopes are designed mainly for endoscopic ultrasound-guided fine needle aspiration. A wide 180-degree ultrasound scanning range and Color Doppler function enable differentiation between blood vessels and lymph nodes and ensure comprehensive imaging of all structures surrounding the region of interest.

Notes:The above endoscopes are not marked in some countries and areas. Marketable models are different from the above in some countries and areas.

In Pursuit of Friendliness to User, Patient and Enviroment

User-friendly universal design

- User-customizable panel switches
- Frequently-used keys are arranged around the trackball.
- Images can be easily frozen thanks to the integration of the gain knob and freeze switch.
- The Flow, PW and M-mode control and gain features can be selected with the use of a single control.
- Menu items can be arranged to individual likings on the large (10.4 inches) LCD touch panel.
- Virtual keyboard for making entries via the touch panel
- Retractable keyboard stored under the operation panel

The document tray, convenient for holding clinical charts and other documents, can be mounted in place of the standard keyboard.

The small and lightweight body is easy to move

The unit is equipped with four swivel casters for turning in a small radius. The unit is easy to move from examination room to the patient's bed side in the ward, CCU, ICU and operating theater.

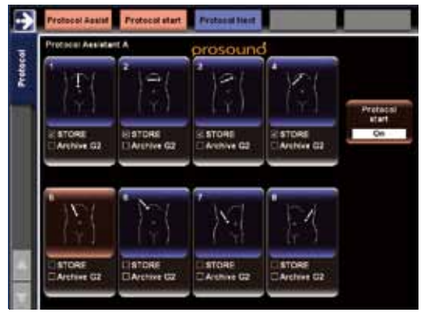
Measuring only 49cm wide x 79cm deep, the unit fits in a limited space.

Protocol Assistant

For smoother examination with no missing recorded images!

Smooth examinations are performed according to the pre-registered protocol (procedures).
By using the check function, it is possible to avoid forgetting to capture and/or measure images.

- Parts to be examined are registered with body marks and annotations.
- Measurement can also be registered as necessary.
- Registered protocols are displayed on the touch panel, enabling the user to check the progress of examination at any time.
- The acquired (recorded) sections are check-marked.
- A message appears if the user attempts to end the examination before completing all the registered procedures.



Remote Controller

Compact and Lightweight, Simple to Use, yet Multifunctional

- The main body of the remote controller is compact and light enough to fit easily in your breast pocket (40×90×10 mm thick; about 50 g). It comes with a neck strap.
- As the menu for the remote controller is displayed on the main screen, the controller can be manipulated while viewing images.
- The controller can control many functions including display mode switching, image adjustment, image freezing and various measurements.
- Can be used in the operating theater by placing it in a sterilized bag.

(Nearly the actual size)

Function menu for remote controller