TOSHIBA

Leading Innovation »»

Aplio 500

PICTURE PERFECT ULTRASOUND

SUPERIOR IMAGING – CUTTING EDGE TECHNOLOGY

Every patient is unique, many are challenging. Aplio™ 500 delivers outstanding performance for superior clinical precision, diagnostic confidence and departmental productivity. Its revolutionary High Density Architecture provides you with clinical images of exceptional resolution and detail, so you can always get your diagnostic answer quickly and reliably.

Offering the widest range of powerful clinical tools for advanced visualization, quantification and intervention, Aplio 500 helps you to improve diagnostic confidence and throughput everyday and on every patient. Exclusive technologies such as Fly Thru and Smart Fusion allow you to communicate pathology more effectively and to improve the accuracy of interventional procedures, saving you time and money.

The comprehensive iStyle™+ Productivity Suite supplies you with a wealth of workflow enhancements and automation functions improving the efficiency and consistency of your exams and improving your patient care.

Aplio's unique core technologies provide an unmatched level of clinical precision, departmental productivity and ease of use, allowing you to get your diagnosis quicker and with higher confidence.

High Density Beamforming

High Density Rendering

Realtime Application

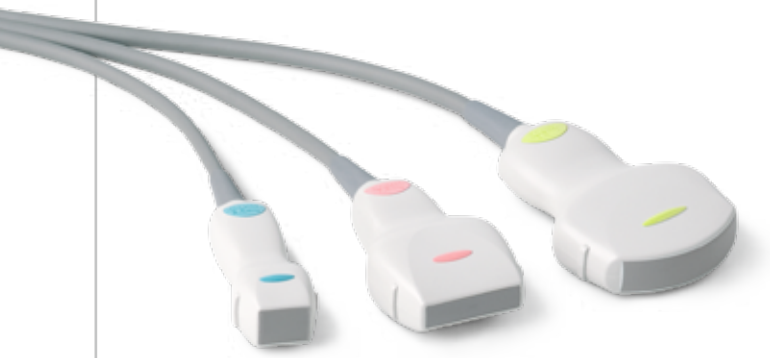
iStyle+ Productivity

Superior imaging performance is one of the key reasons that make Aplio one of today's most popular premium diagnostic ultrasound systems. A full range of clinically proven tools offers uncompromised image quality. A host of advanced imaging and quantification functions ensures that you can make the best informed disease management decisions.

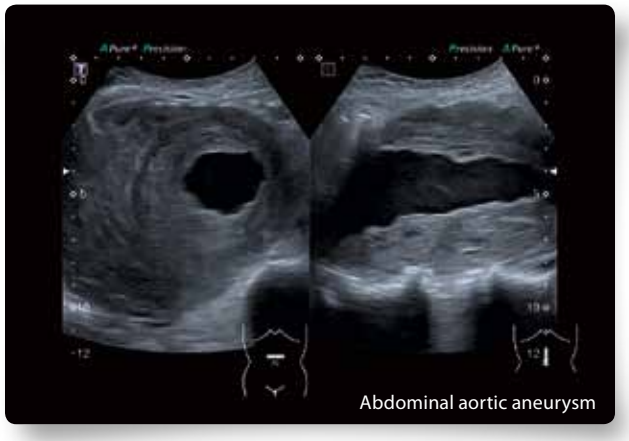
High Density Beamforming

ENJOY THE PERFECT PICTURE EVERYDAY

At Toshiba we believe that only the best image quality allows a diagnosis to happen quickly and with confidence. Each of our unique imaging technologies provides you with better image quality by reducing noise, strengthening signal and improving visualization. Aplio's revolutionary High Density Beamformer uses the most advanced digital signal processing to control the ultrasonic beams more precisely and flexibly than any other system.



Perfect transducers for perfect diagnostics
Designed to minimize operator stress and to increase efficiency, our lightweight transducers feature outstanding clinical versatility, ergonomic shapes and thin, super-flexible cables. From standard models to specialty probes – all of Aplio's transducers deliver superb image quality and respond with highest flexibility to the widest range of clinical applications.



Precision Imaging
With Aplio's new and enhanced Precision Imaging technology you can experience ultrasound imaging as close to reality as never before. From widespread areas to fine details in layers and boundaries Precision Imaging reveals more clinical detail for a faster and safer diagnosis. Precision Imaging delivers outstandingly smooth images with significantly sharpened outline of lesions, enhanced image uniformity and reduced clutter.

ApliPure^{+}
ApliPure™$^{+}$ combines the advantages of spatial and frequency compounding to provide you with images of unsurpassed uniformity and detail while preserving clinically significant markers such as shadows behind echo-dense objects. ApliPure^{+} delivers increased imaging contrast and reduced speckle noise to improve visualization.

Unprecedented detail for a more precise diagnosis

Each of our unique imaging technologies provides you with better image quality by reducing noise, strengthening signal and improving visualization.
All functions work hand in hand with other imaging modes for even greater uniformity within each application.

- Precision Imaging
- Differential THI
- ApliPure+
- Color Doppler
- TwinView™

- Precision Imaging
- Differential THI
- ApliPure
- Color Doppler
- TwinView

- Precision Imaging
- Differential THI
- ApliPure
- Power Doppler
- Spectral Doppler
- Doppler auto trace

Differential Tissue Harmonics
Differential Tissue Harmonic Imaging takes outstanding tissue definition deeper than ever before. By simultaneously transmitting two frequencies in a single pulse Differential Tissue Harmonics provides images of unsurpassed spatial resolution and contrast, alongside with greatly increased penetration.

Tissue Specific Optimization (TSO)
Ultrasound imaging can heavily depend on patient condition. Due to its significantly lower speed of sound in fatty tissue the resulting aberration can degrade the focus characteristics and thus jeopardize your diagnostic result. With TSO you can now adjust the speed of sound automatically to minimize beam distortion and to improve imaging results and diagnostic outcome.

Advanced Dynamic Flow™ (ADF)
Advanced Dynamic Flow adds superior spatial resolution to color Doppler imaging to reveal minute vasculature and complex flow patterns with unprecedented accuracy and detail. With ADF you can display flow directionally and accurately at high frame rates, while maintaining the full B-mode image quality.

Both the busy clinician and the patient benefit from volumetric ultrasound. A complete set of data can be acquired and stored in raw format in just a few seconds, reducing examination time to a minimum. The stored raw data can be retrieved, read and manipulated anytime later with no loss of functionality.

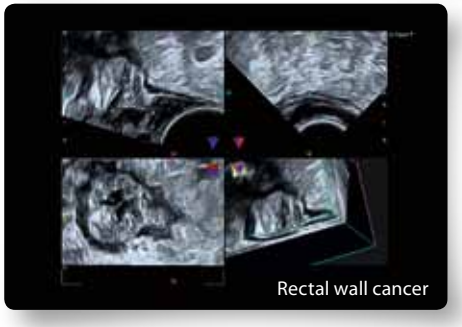
A NEW DIMENSION OF IMAGING AND INTERVENTION

Aplio's comprehensive 3D/4D volume imaging suite extends your diagnostic capabilities into the next dimension of imaging and intervention by providing accurate renderings and arbitrary volume cuts in realtime or offline. Aplio's new High Density Volume Rendering Engine gives you extraordinary image quality at high volume rates for uncompromised workflow and clinical result.

High Density Rendering

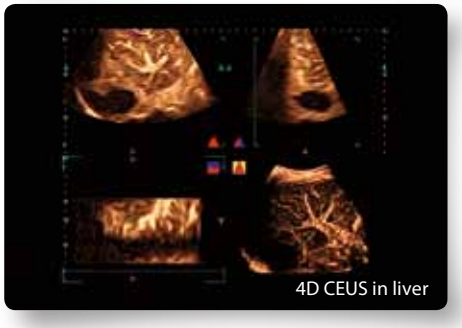
Fetal face and umbilical cord

Surface Rendering
Surface Rendering adds a visual 3D effect to volumetric data to display the surface of anatomical structures in a natural, easy to understand manner. The technique provides outstanding delineation of detail and enhances the visual impression of structure and cavities. This can prove especially helpful when collaborating with referring clinicians or communicating the clinical results to the patient.



Rectal wall cancer

Multi-Planar Reconstruction (MPR) and MultiView
Aplio provides you with a wealth of tools to improve visualization of complex anatomy or the extent of a given lesion. The system's MPR function allows you to review a region of interest simultaneously in three orthogonal planes accompanied by a surface rendering or box volume image. Series of cross sections generated with MultiView can help you assess lesions and associated structures efficiently.



4D CEUS in liver

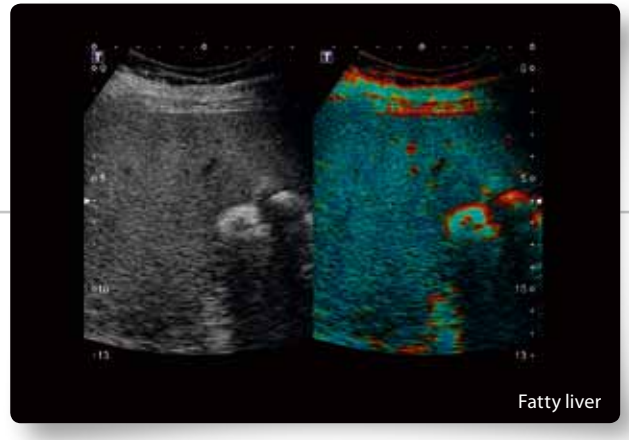
Advanced volume imaging modes
Advanced modes can add valuable functional information to the grayscale image. With Aplio you can acquire 3D volumes with the same outstanding image quality and resolution that you are used to from 2D imaging. Additionally the system enables you to acquire color Doppler, Advanced Dynamic Flow, STIC or CEUS information in 3D with no loss in image quality or functionality.

Volume imaging transducer
A complete range of volume imaging transducers is available for Aplio. Their compact and lightweight design delivers outstanding image quality in an ergonomic housing.

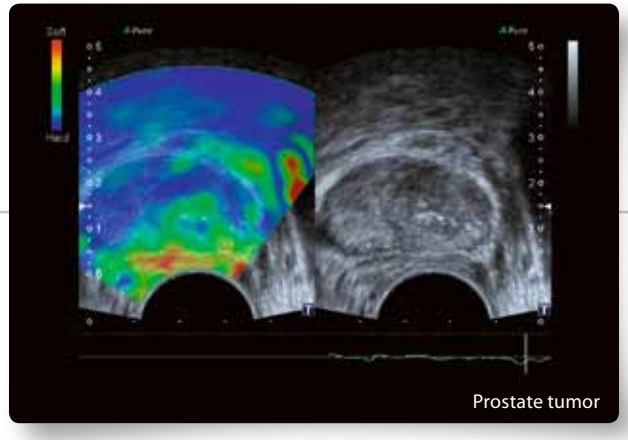
Realtime Application

ADVANCED TOOLS TO HELP YOU BETTER EVALUATE DISEASE

Powered by the industry's most advanced Realtime Application Platform, Aplio 500 provides you with a complete range of exclusive, clinically proven technologies to increase your diagnostic confidence. By giving you valuable additional information in easy to understand visual, parametric and quantitative formats, these advanced technologies can help you avoid supplementary exams to get your diagnostic answer. Thus, you can save expenses and enhance your department's productivity.


Fatty liver

Acoustic Structure Quantification (Live ASQ)*
Acoustic Structure Quantification is a non-invasive tool to assist you in the assessment, characterization and follow-up of fibrotic disease during a standard ultrasound scan. Live ASQ assesses tissue homogeneity quantitatively and depicts tissue properties in a convenient color-coded display. Its proven low intra- and inter-observer variability can make ASQ a valuable tool for long-term surveillance and follow-up of treatment.


Prostate tumor

Realtime elastography
Our comprehensive elastography solution with raw data functionality assists you in localizing and assessing palpable masses with high accuracy, sensitivity and reproducibility in a wide range of clinical settings. Different degrees of tissue elasticity can be quantified or color-coded in parametric images making suspicious tissue changes quantifiable and visible in the ultrasonic image.

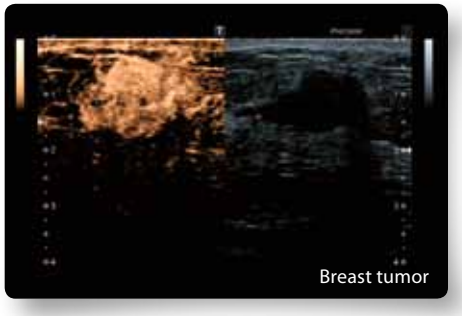

Calcifications in breast lesion

MicroPure™
MicroPure is an innovative clinical tool that can help you identify microcalcifications, a potential marker for malignancy, in the breast and other organs. The technique highlights automatically detected calcifications as white spots in the masked 2D image. MicroPure can provide effective support for precise biopsies under realtime ultrasound control.

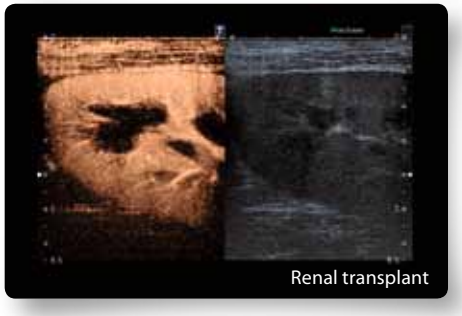
*Live ASQ is available for clinical research purposes only.


Liver hemangioma

Contrast-Enhanced Ultrasound (CEUS)
Our comprehensive contrast imaging package allows you to assess perfusion dynamics in a wide range of clinical settings. Depending on the system configuration, up to 24 transducers support contrast-enhanced studies, including an ample variety of specialized probes such as high frequency, intra-operative, intra-cavity and 3D/4D transducers.


Breast tumor

TwinView and dual CEUS
Toshiba's Pulse Subtraction™ technology enables you to carry out perfusion studies with the highest sensitivity, resolution and image uniformity. The system's TwinView capability allows you to work under realtime B-mode control or simultaneously with two different CEUS frequencies, making it a great tool to facilitate interventional procedures or the study of complex cases.


Renal transplant

Micro Flow Imaging (MFI)
Micro Flow Imaging helps you trace small bubble populations, even in very low-perfused and peripheral areas. The function automatically accumulates uptake of contrast agent in a given region of interest and can display perfusion in relation to a reference point. The function's built-in motion stabilizer allows you to create contrast-enhanced images of stunning spatial resolution and detail.

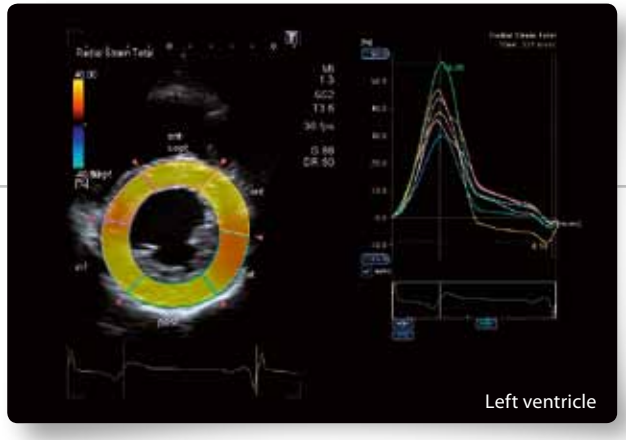

Kidney perfusion

Vascular Recognition Imaging (VRI)
VRI is an ultra-low power CEUS technique that helps you to visualize both vascularization and perfusion simultaneously in an easy to understand manner. Its unique tri-color display depicts contrast wash-in and wash-out in the main branches in red or blue depending on the direction of flow. Parenchymal perfusion is shown in green at the same time to give you a complete overview in one single frame.


Liver tumor post treatment

Contrast quantification
Aplio 500's CEUS quantification suite allows you to assess perfusion dynamics with high precision and flexibility to create objective results for clinical research and routine. The software is highly reproducible thanks to its raw data processing and its semi-automatic ROI tracking functionality. The contrast quantification suite is available as option on both the console and the workstation.

UltraExtend FX
With the optional workstation you can carry out advanced analysis tasks or prospective studies with the same comfort and precision as directly on the console – anytime and anyplace needed. Moreover, using the external workstation will free your Aplio and thus can make your lab more productive.



Wall Motion Tracking
Toshiba's proprietary speckle tracking technology provides immediate visual and quantitative access to regional myocardial wall motion with unrivalled accuracy and resolution. With Aplio you can assess and quantify parameters such as strain, strain rate or displacement during the examination or anytime later, on the console or on the workstation.

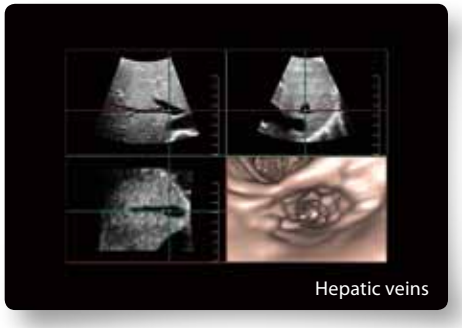
Auto IMT
The intima-media thickness (IMT) of the carotid artery is an important parameter for assessing a patient's risk of developing cardiovascular disease. Aplio provides you with an easy to use tool to determine the thickness of the intima-media layers of the near and far arterial walls automatically at an optimal angle of incidence and in two complementary planes.

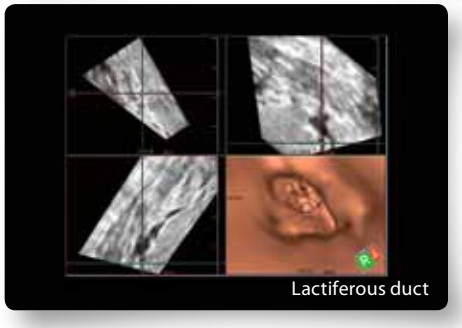
Specialty transducers
Aplio 500 provides you with an extensive selection of specialty transducers for the widest range of clinical applications, including many advanced techniques such as elastography or CEUS. All specialty probes feature the same outstanding image quality and versatility as the standard transducers.

Fly Thru

FLY THRU

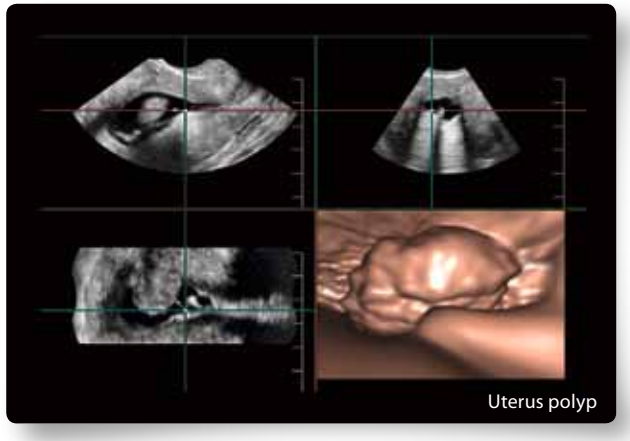
Fly Thru is a stunning new technology that lets you virtually dive into a volume data set to explore cavities, ducts and vessels from the inside and in 3D. Being comparable to virtual endoscopy, Fly Thru adds cross-sectional ultrasound information to the plain surface data, making it an expert tool for exploring lesions and ingrowing masses, as well as to assist in planning and follow up of interventions such as placing stents or grafts.

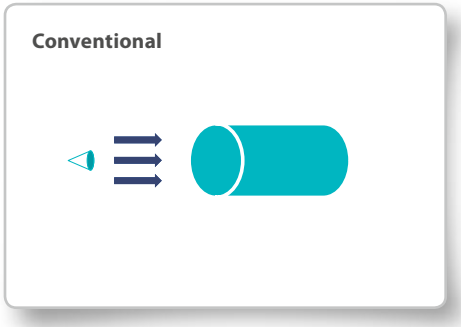




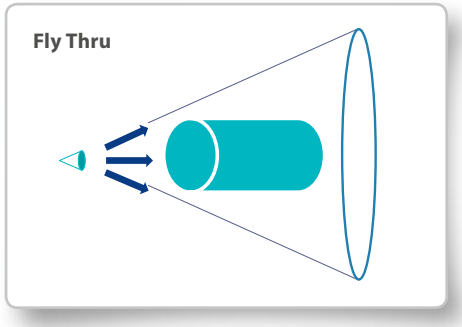
Automatic volume navigation
Fly Thru navigates you automatically through cavities, ducts and vessels. All you need to do is to set a start point anywhere in the volume to start the autopilot function. If needed, you can take over control at any time. Moving the trackball will change the flight direction. Using the console's rotary switches you can also browse the cavity fully manually.

Display and storage options
Thanks to its raw data functionality Fly Thru can be performed on any 3D volume data set acquired with your Aplio at any time. Similar to the MPR function, Fly Thru images can be supplemented by adding three orthogonal planes providing additional, cross-sectional information as well as a marker indicating the direction of navigation. Each flight can be stored as a movie clip for later review or presentation.





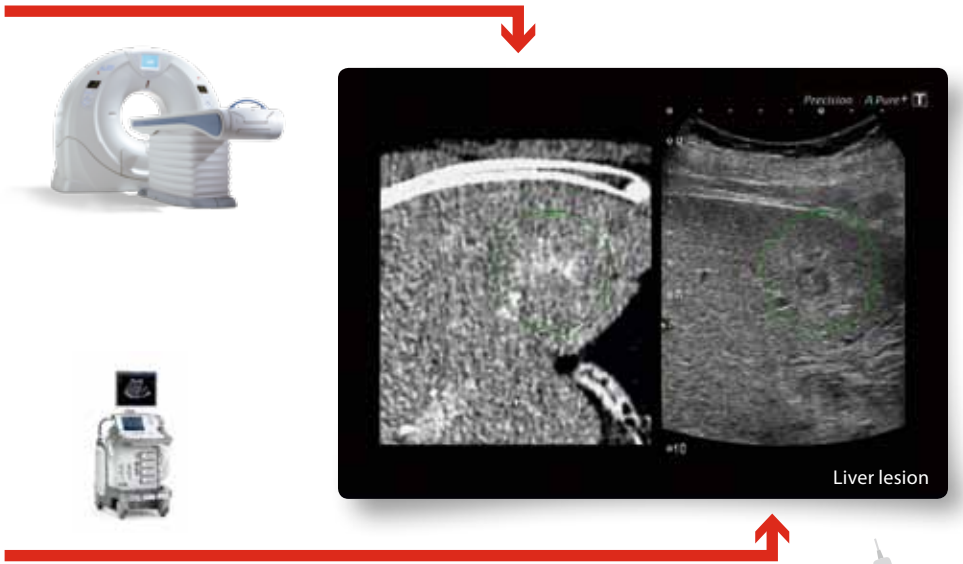
Conventional 3D imaging
Conventional 3D imaging makes use of parallel projection to display the surface of a given structure. All objects, proximal or distal, are displayed at the same size.



Fly Thru perspective 3D imaging
Fly Thru uses perspective projection to display the surface structure, emphasizing the near field over the far field. Thus proximal objects appear bigger than distal objects.

SMART FUSION

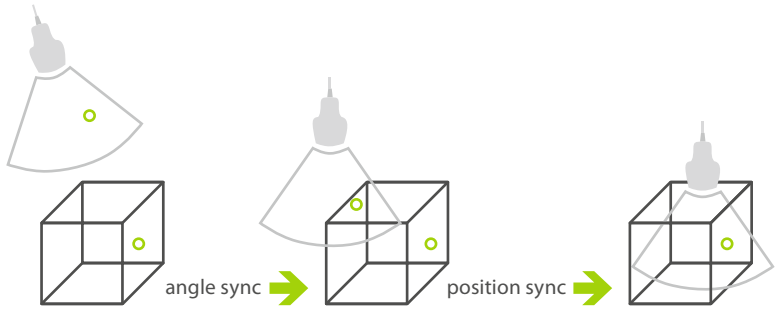
Now you can remain fully focused on interventional procedures at all times. Our Smart Fusion virtual navigation takes you safely to your destination. Smart Fusion allows you to correlate different imaging modalities in realtime to faster locate difficult lesions, to securely navigate complex anatomy or to improve confidence while carrying out invasive procedures.
Smart Fusion reads 3D DICOM data sets from all major imaging modalities and shows the corresponding images contained in realtime adjacent to the live ultrasound display. For a comprehensive pre- and post-evaluation of the intervention Smart Fusion allows you to work in any ultrasound imaging mode including color Doppler and contrast-enhanced ultrasound.



Merging modalities to improve confidence
Matching the transducer position with the pre-acquired 3D data set is a simple and quick two-step process. By moving the transducer over the region of interest you can now browse the area simultaneously in both realtime ultrasound and pre-acquired volume data. Intelligent target and marker points facilitate navigation in the region of interest.

Smart Fusion

Position sensor
A magnetic position sensor with sub-millimeter accuracy allows for precise spatial correlation of different imaging modalities in realtime. Attaching the sensor to the transducer shaft allows for undisturbed imaging and intervention.



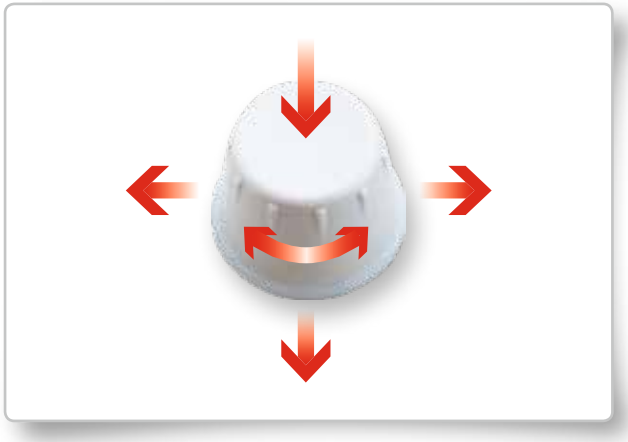
PERFORMANCE MEETS INTELLIGENCE

Our unique iStyle+ productivity suite provides you with a full host of technologies that offer ergonomic relief by reducing keystrokes, improving workflow and raising the consistency of exams. A smaller, lighter form gives you greater maneuverability while the fully configurable console and intelligent workflow support functions enable faster exams and greater productivity.

iStyle+ Productivity

Ergonomic user interface

Aplio 500's compact design with floating console and fully articulating monitor arm enables you to create an ergonomic work environment in virtually any clinical setting. The system's premium quality LCD screen with the four-axis arm can move and swivel into perfect position for better viewing and to protect you from neck, shoulder and eye strain.



3D multifunctional keys

Aplio's 3D multifunctional keys offer four degrees of freedom for outstanding usability. Their mode-sensitive function is fully programmable and displayed in the adjacent touch screen in an easy to understand manner.

Fully programmable console

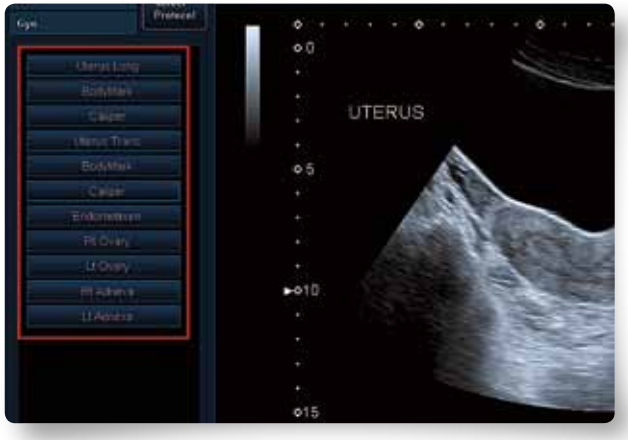
You can customize Aplio's console to suit your clinical needs and personal preferences simply by reassigning functions to the keys of your choice. This results in better reach, fewer keystrokes and a shorter learning curve. The mode-sensitive touch screen, which is now also programmable, enables direct access to complex measurements, labels and advanced functions.

Quick Start clinical settings

Changing presets during an exam can disrupt your workflow, because system settings need to be optimized from scratch. The fully programmable Quick Start menu allows you to adjust only the relevant parameter set at a single touch of a button. All other settings remain untouched. This way you can easily adjust the system to any specific clinical target while ensuring a smooth, uninterrupted workflow.

QuickScan image optimization

QuickScan allows you to achieve greater consistency in your exams by ensuring that superb image quality is the benchmark at all times. With a simple push of a button you can automatically optimise image quality in 2D and spectral Doppler modes with acoustic precision while suppressing unnecessary noise and clutter in echo-weak regions.



Quick Assist protocols

Aplio's protocol assistant provides a reliable method to ensure that the same exam is performed from patient to patient. Once activated the tool automatically launches a clear, easy to read on-screen menu that will guide you through your exam. Always anticipating your next step, the protocol assistant allows you to focus even more on the image and the patient. Aplio's protocol assistant can be customized based on your department's scanning procedures.

From imaging to quantification, from reporting to archiving, Toshiba provides a full spectrum solution that helps you manage routine and advanced clinical studies more efficiently.

Thanks to the system's embedded raw data functionality you can review, analyze, report and archive your clinical data anytime with no loss of functionality. Aplio is designed to embrace open network standards to facilitate easy integration in the widest variety of network environments.

Additionally, to ensure the system's continuous high performance, we offer a range of support services our customers have consistently rated best in the industry.

DICOM networking

Aplio is designed to embrace open network standards to facilitate easy integration in the widest variety of network environments. With full DICOM connectivity including all major service classes, embedded 3D/4D raw data functionality and IHE compliance, Aplio integrates seamlessly into virtually all networked clinical environments.

Managing your study data

Aplio's fully integrated patient and image management system allows you to review and manage your studies conveniently onboard before sending it to PACS for reporting or archiving, including image and raw data as well as structured reports. And if a study is not performed in the exact order, Aplio's shuffle feature allows you to place the images into the correct order before sending them to PACS for reading.

Exporting your clinical data

Aplio ships standard with a DVD writer and USB connection for study documentation and data export. The unit can be equipped with integrated medical printers or a DVD recorder for onboard study documentation. A digital video interface is available to connect your Aplio to external devices such as additional monitors.

Reporting options

Aplio provides comprehensive onboard facilities allowing you to semi-automatically generate reports including measurements, charts, clinical images, as well as text. Reports are customizable to meet your department's standards and formats. If you prefer to do your reporting offline, we offer a wide range of workstation and connectivity solutions.

UltraExtend FX

Our external workstation solution gives you full access to your clinical data and diagnostic tool set wherever and whenever needed. With embedded raw data functionality and a host of clinical tools you can review, analyze, report and archive your data quickly and easily.

TOSHIBA AND THE ENVIRONMENT

Good for our planet, right for our customers
Caring for the earth and its people is at the heart of everything Toshiba does – and one of the many ways we innovate. Toshiba's passion for safeguarding the earth is enshrined in our Environmental Vision 2050, whereby we seek to improve our eco-efficiency by a factor of ten over the next four decades through strict monitoring of energy usage, continuous improvement of manufacturing processes and eco-conscious product development.

Far from being a distant goal, the Environmental Vision 2050 sets tangible milestones year by year. These include the reduction in emission of CO_2 and other greenhouse gases, and the complete phasing out of certain hazardous substances from our products.

TOSHIBA eco style

Design, manufacturing and shipment

No sustainability without quality
By manufacturing high quality diagnostic imaging equipment that lasts, we ensure that you can enjoy working with your machine over many years. Our software-driven platforms are easy to upgrade to keep you abreast of new diagnostic tools for a long time. Since its commercial introduction in 2001, we have provided more than 20 upgrades to our Aplio series of products, each of them with significant impact on diagnostic performance and clinical workflow.

And while we continuously work to improve the performance of our equipment, we drive down consumption of energy and resources at the same time. To further reduce weight and resources we now provide all software options for our ultrasound equipment by electronic license keys, and the system's user manuals ship standard in electronic format. All transducer boxes are size-optimized and made from recycled cardboard.

Product use

Energy efficiency is the key
A major part of the greenhouse gas emissions our medical imaging systems produce accrue while you scan your patients. Therefore we design our products to be outstandingly energy efficient, and even to recycle energy wherever possible. Take for instance our Aquilion One CT scanner. While braking its gantry, 25 % of the energy used to set it into rotation can be recovered and stored for the next scan.

In addition to all our efforts to manufacture energy efficient products, conscious use of the equipment can help significantly to minimize its overall ecological impact. For instance, when you do not use the system for a longer period of time, you can shut it down or put it in standby mode. Together, you and us, we can make a difference.

Refurbishment and recycling

End of use is not the end of life
Because outstanding quality lasts, your Toshiba medical imaging equipment remains of high value even after you replace it with new equipment. Our SecondLife refurbishment program helps to maximize the life span of our equipment by enabling you to sell or buy used equipment of the same high quality as our new machines.

Moreover, we make sure that most spare parts remain available up to 7 years after discontinuation of a product. But when the time comes, our medical imaging equipment is designed for easy disassembly and recovery of materials to minimize the environmental impact also at the end of its life cycle.

GLOBAL INNOVATION BY DESIGN

For over 130 years Toshiba's research and development has improved the health and welfare of people around the world. Today, Toshiba Medical Systems offers a full range of diagnostic imaging products and is a reliable service partner in more than 110 countries. In accordance with our Made for Life™ commitment, we will continue to develop innovations that improve patient care and provide lasting quality for a lifetime of value.

WHY TOSHIBA?

Innovation

Toshiba is a world leader and innovator in high technology, spanning information & communications systems, digital consumer products, electronic devices, and medical imaging systems. Year on year we file thousands of patents, leading the way within each industry sector making innovation a key part of the Toshiba fabric.

Quality

At Toshiba quality and reliability is at the heart of everything we do. With technologies and products being developed in more than 30 R&D laboratories and over 300 subsidiary companies across the globe Toshiba engineers are dedicated to develop the best-performing, most reliable and environmentally friendly product solutions for you.

Design

Our product design is driven by customer feedback and the close consultation with industry visionaries and opinion leaders. Our award-winning Corporate Design Center has over 50 years of experience in developing appealing products and industry-leading solutions.

Partnership

Making sure your systems deliver from day one is an important part of our relationship. Whether you need onsite or offsite training, we can provide options that work best for you. Experienced clinical application specialists will help you maximize the potential of your new equipment.

Environment

With Environmental Vision 2050, Toshiba announced its commitment and determination to contribute to a better environment by emphasizing the stable supply of reliable energy and mitigation of climate change as well as by creating new value in harmony with the Earth.

Aplio

Made for Life™

TOSHIBA MEDICAL SYSTEMS CORPORATION

http://www.toshibamedicalsystems.com

Model number: TUS-A500 MCAUS0221EA 2012-04 TME/TMSE/D

Toshiba Medical Systems Corporation meets internationally recognized standards for Quality Management System ISO 9001, ISO 13485.
Toshiba Medical Systems Corporation Nasu Operations meets the Environmental Management System standard, ISO 14001.

Some features presented in this brochure may not be commercially available on all systems shown or may require the purchase of additional options. Please contact your local Toshiba representative for details.

Printed in Japan