



The innovative ideas that build the basis for our high-class systems do in the beginning only exist in the minds of our engineers. Familiar concepts and existing technologies are continually questioned and improved until the state of ultimate perfection is reached. New therapeutic and diagnostic approaches together with the creative suggestions of our users and the latest developments in IT-Technology create the basis for innovative solutions for diagnostic ultrasound imaging. We are always aware that our customers demand high standards – from us and from our products. The wish to meet these expectations anew has been our motivation to develop our new Ultrasound Unit EUB-6500.

Being flexible means that you never stop thinking straight forward but at the same you must keep your eyes on what is happening right and left. This helped us to develop our new open system architecture on the basis of a Windows-NT-platform which is characterised by its outstanding performance.

INNOVATION STARTS IN THE MIND



technology

The open system architecture provides the basis for new, innovative technologies that contribute to the excellent clinical performance and output of the HITACHI EUB-6500.

ergonomics

With its highly ergonomic design and functionality, the EUB-6500 is very user-friendly and ensures intuitive access to all functions of the system. The compact design and the light weight result in a highly mobile system that can easily be manoeuvred even in small rooms.

flexibility

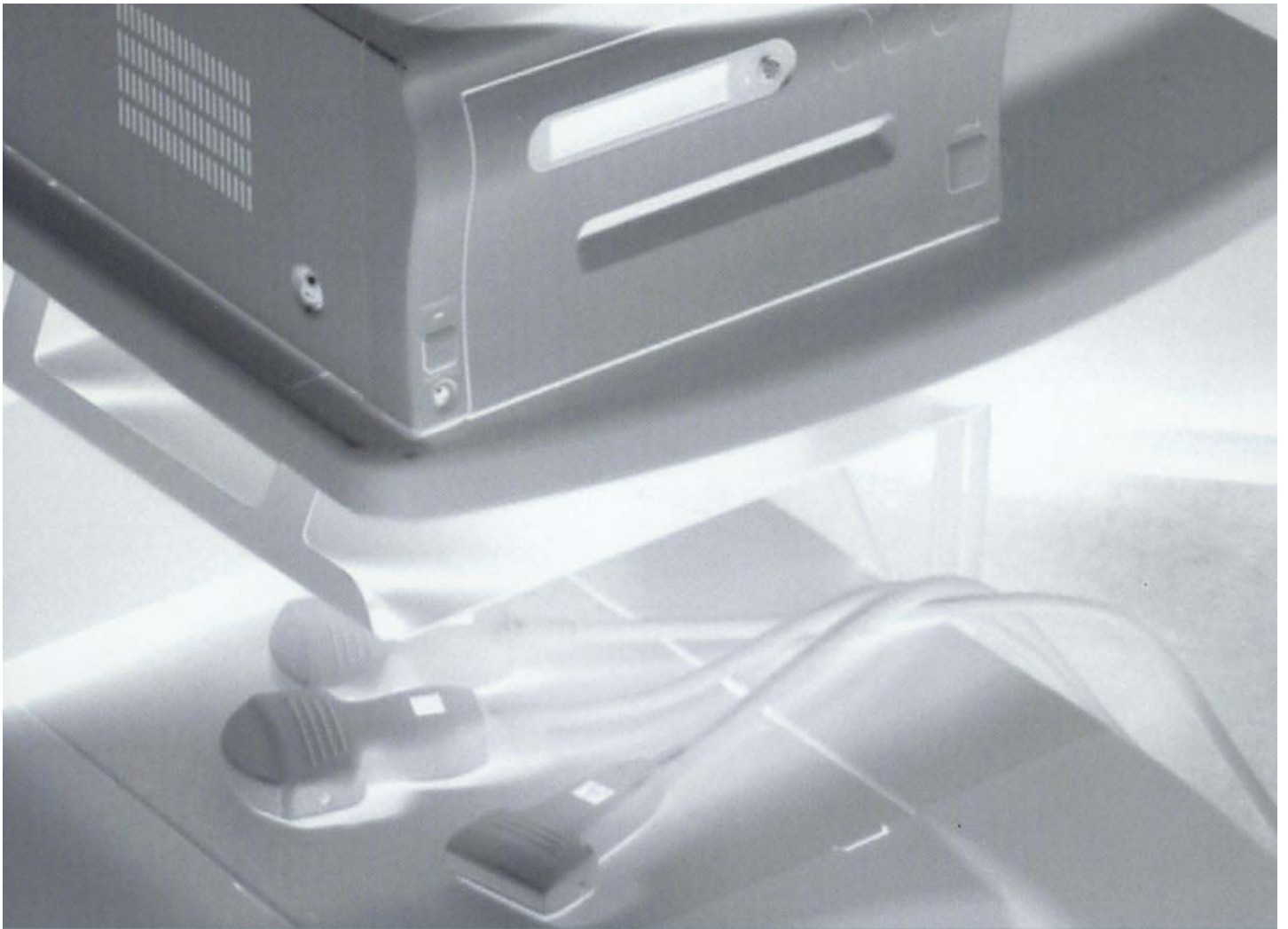
The platform of the HITACHI EUB-6500 allows the use of more than 40 different high-performance ultrasound probes and thus covers an unprecedented broad range of applications for diagnostic ultrasound.

integrated hi-pacs workstation

The HI-PACS workstation that is fully integrated into the system architecture enables that images and data acquired during the examination can be processed and stored and does in addition ensure the direct communication between the EUB-6500 and external PACS-systems or hospital networks.



FLEXIBLE FORWARD THINKING



expectations and innovative concepts

The modular design of the EUB-6500 supports all imaging modes, so that the mode decision can be taken according to the individual needs. No matter if we are talking about 3D-Imaging, Omnidirectional M-Mode (OMD) or dynamic Contrast-Harmonic-Imaging (dCHI) – the EUB-6500 always offers you the best options for diagnostic imaging. This is also true for our new function, the so-called Wide-View Imaging. By not only showing the organ to be examined but also the adjacent structures, Wide-View Imaging represents a feature that becomes more and more important for clinical findings and therapeutic decisions.

To complete the excellent possibilities of ultrasound imaging, the EUB-6500 offers you a broad range of electronic echoendoscopes for radial or longitudinal EUS and high resolution mini probes for intraluminal examinations.



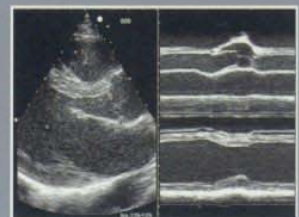
Contrast Harmonic Imaging



Wide-View Imaging



3-D Imaging



Omnidirectional M-Mode (ODM)

INNOVATION HI-VUE IMAGING



All ultrasound technologies developed by HITACHI have one goal: to guarantee maximum diagnostic confidence for each examination. The open platform of the EUB-6500 has been designed in a way, that new features which have not yet been realised today, can easily be integrated.

Our aim is to integrate new technologies in a way that you can focus on what is really important: your patient and your examination.

The name, HITACHI has for the combination of these aspects is HI-VUE Imaging™.



the core technologies of hi-vue imaging are:

parallel-pro architecture

With its dual-parallel-working processor lines, the EUB-6500 is characterised by an outstanding signal processing capacity and thus ensures a high diagnostic confidence. The new Parallel-Pro-Architecture and the dynamic beamforming technology for optimal signal acquisition ensure that each transducer element, which can be individually steered according to your needs, has its own dual-parallel-working signal processing channel. The resulting greater simultaneous aperture leads to an outstanding image quality and extraordinary contrast resolution even in deeper structures.

gigasampling-technology

By 12-bit A/D conversion high frequency signals are generated in ultra-fine digitalisation while the system simultaneously records the amplitude and the duration of all signals. Integrated high-speed-processors allow that the data can be analysed in real time. With the new Parallel-Pro-Architecture, a data throughput two times higher than in conventional systems can be achieved. Signals which are regarded important for the diagnosis can be filtered out and amplified in the very early stage while unwanted noise can be suppressed. This results in nearly unlimited digital precision.

multifrequency-wideband imaging

The Multifrequency-Wideband Imaging contributes to a higher clinical benefit and extended diagnostic possibilities of the EUB-6500 for nearly all applications. As the digital beamformers of the system are designed for bandwidths between 1,5 and 25 MHz, the clinical application of ultrasound probes is expanded up to five frequency ranges in B-Mode, four frequency ranges in dynamic Tissue Harmonic Imaging (dTHI) and two frequency ranges for Colour and Spectral Doppler -Imaging. Thanks to Multifrequency-Wideband Imaging, dynamic Tissue Harmonic Imaging can now also be performed with high-frequency linear or endocavity probes.



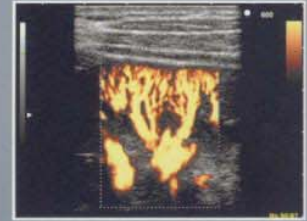
Cardia-Tumor,
Electronic Radial Echo-
endoscope



Gallbladder
Contrast enhanced by Dynamic
Tissue Harmonic Imaging (dTHI)



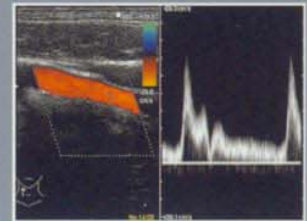
Barrett-esophagus,
Miniprobe 20 MHz



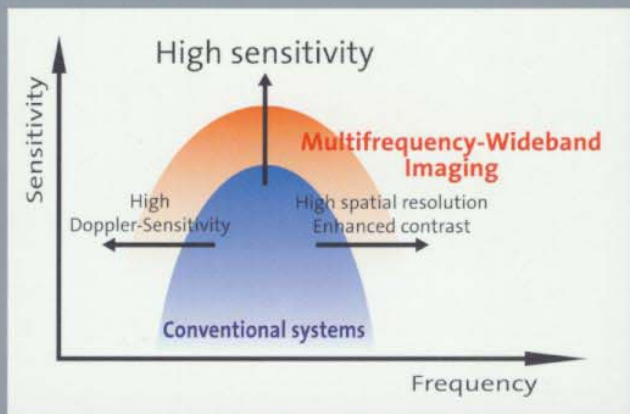
Kidney transplant,
CFA visualization



Fetal circulation,
22W in CFI-Mode



CFI-Image and PW-Doppler of
Carotis Comunis





wideband-pulsed-inversion

The Multifrequency-Wideband-Imaging of the HITACHI EUB-6500 also provides the basis for another imaging technique that contributes to higher diagnostic confidence: the so-called Wideband-Pulsed-Inversion-Mode (WPI). As with conventional phase inversion methods, two ultrasound signals with contrary phase positions are transmitted into the body and the returned echoes are later on received and added. In Wideband-Pulsed-Inversion, the linear

echoes of the fundamental frequency are suppressed while the non-linear, harmonic signals of higher frequencies are collected and used for image acquisition.

In contrast to conventional phase inversion methods, the Wideband-Pulsed-Inversion-Technique invented by HITACHI allows the modulation of the transmitted frequency ranges between the pulses.



Nativ

dTHI



Nativ

dTHI + WPI



This new technology has been developed especially for dynamic Tissue-Harmonic-Imaging (dTHI) and for examinations which require the use of contrast agents, i.e. dynamic Contrast-Harmonic-Imaging (dCHI).

The benefits are: a significantly higher lateral resolution without compromising the axial resolution and a much better image contrast. With frequency

modulation we are able to achieve considerably higher sensitivity in deeper structures than with conventional Harmonic-Imaging-Techniques.

Wideband-Pulsed-Inversion can either be performed with low-frequency probes for abdominal and cardiac applications as well as with high-frequency linear or endocavity probes.

HITACHI

INNOVATION WORKFLOW

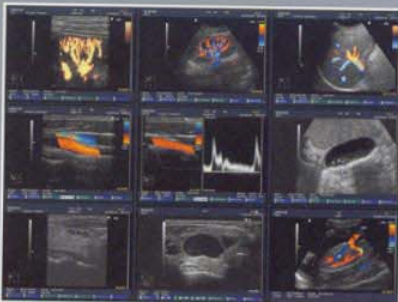
workflow-concept

Economic efficiency, high speed and a high diagnostic confidence: these have been the basic requirements for the workflow-concept of the EUB-6500 which guarantees easy handling before, during and after the examination.

In detail, easy handling includes the possibility to retrieve the patient data stored in the hospital network by simply pressing a special key as well as the application-specific set-up of the system in real-time.

A user-friendly control panel, the quick switching between different imaging modes, the direct storage of images, the immediate access to images stored and the storage of digital video clips ensure a high speed and increased patient throughput. All examination data can be directly and easily retrieved.

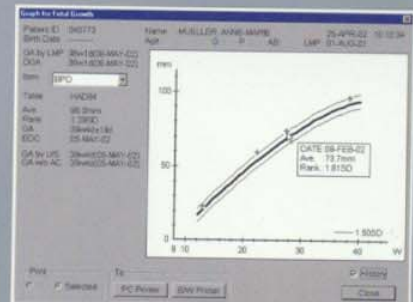
The workflow-concept of the EUB-6500 sets new standards for ultimate productivity and efficiency. With its highly ergonomic design, the system also allows a user-friendly, intuitive operation.



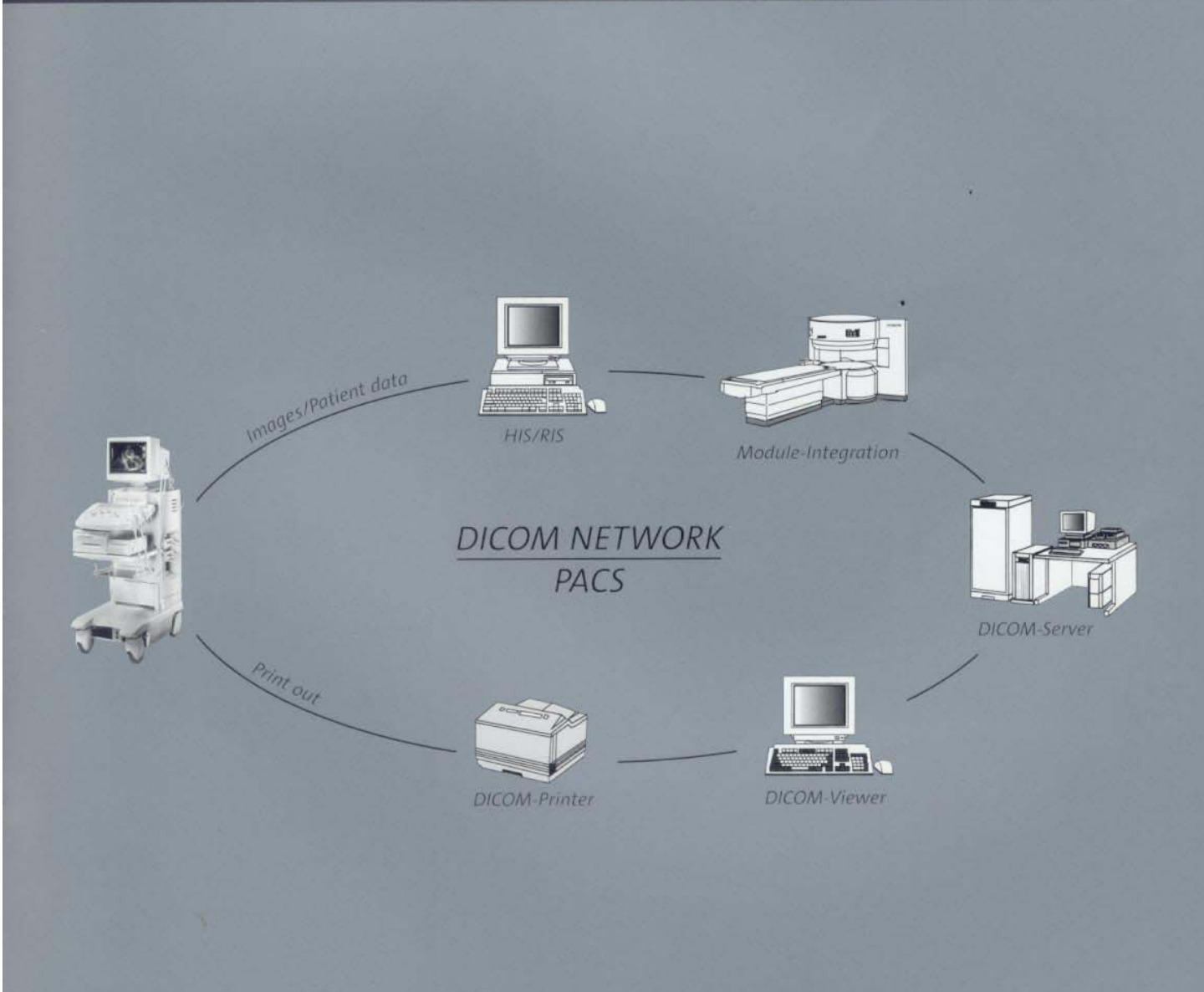
Comparison of images and diagnostic findings



Image/patient data archive



Patient data



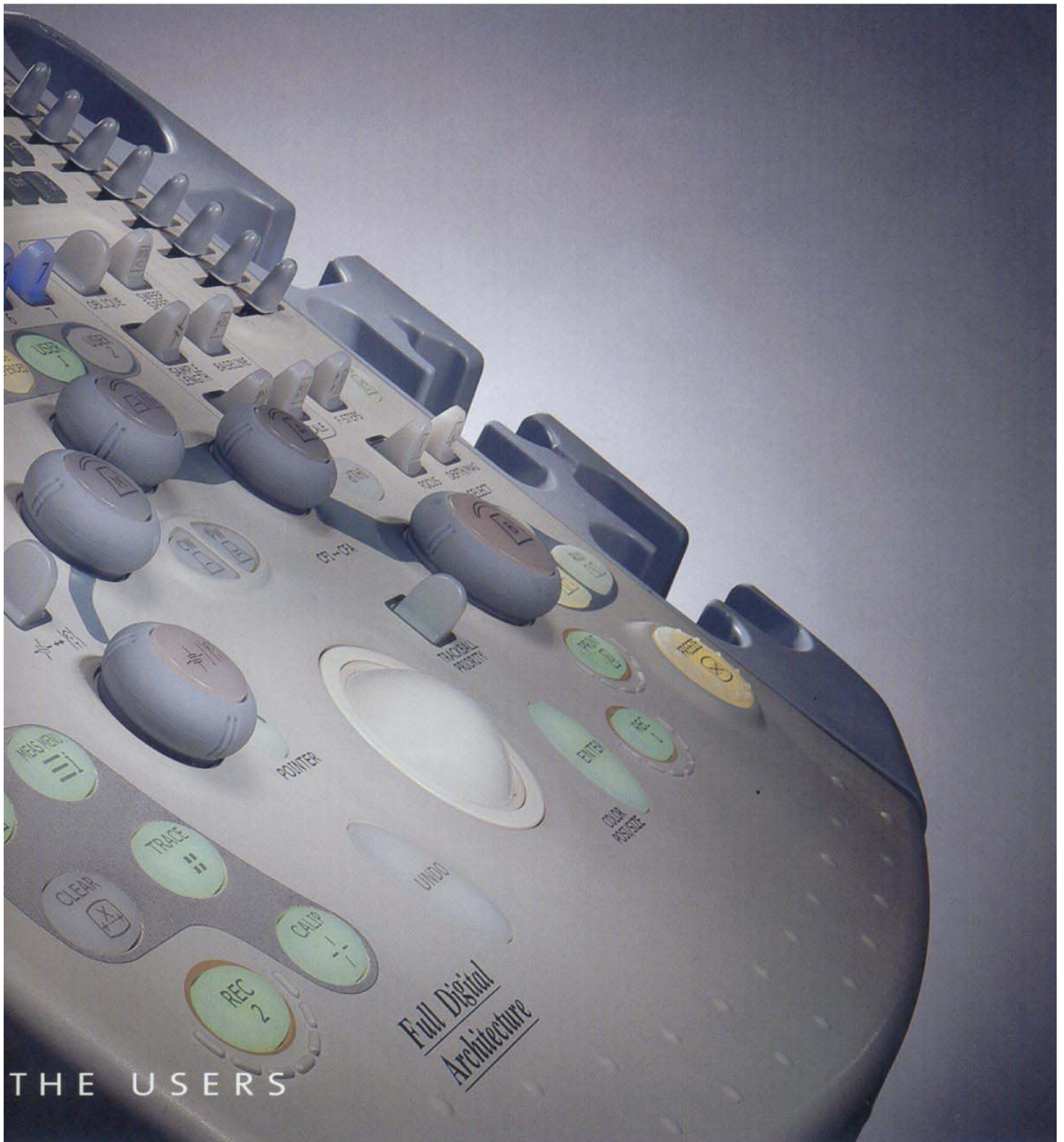


SYSTEMS GEARED TO THE NEEDS OF

intuitive operation - a new aspect

The HITACHI EUB-6500 sets new standards for user-friendliness and efficiency. In order to keep unnecessary movements to a minimum and improve the efficiency of the working process, the control panel has been subdivided into logical units. The keys for the

most important functions are arranged intuitively around the trackball in the middle. The interactive lighting of the control panel is another function that contributes to easy handling during the examination: the functions available in the selected imaging mode



THE USERS

are highlighted and can easily be identified. Many keys on the control panel can be programmed individually according to your needs. The HITACHI EUB-6500 is a user-friendly system that adapts itself to the needs of the users and not vice versa.

Even the transducers are characterised by the extremely light weight of their case and their highly flexible cables. In combination with the logical, intuitive access to all components of the system this represents an active contribution to a non-fatiguing work environment.



MOBILITY – ONLY A QUESTION OF TECHNIQUE

mobility – only a question of technique

Up to now, premium class ultrasound systems have been quite immobile because of their size. A new design and the consequent miniaturisation of all electronic components of the system led to the unique compact design of the HITACHI EUB-6500, we refer to as: Compact-Ergonomic-Design.

With its light weight and extremely compact design the HITACHI EUB-6500 is a highly mobile system that can easily be manoeuvred in small rooms, in the operating room or below monitoring-systems. You are not willing to make any compromises – why should your ultrasound system do so? Just use the qualities of your system where you need them.

central issue environment

Ecological awareness and the eco-friendly production in our opinion is one of the most important responsibilities of a company.

The central issues for the production of HITACHI Medical Systems have always been: high diagnostic confidence, high quality and eco-friendly production.

The HITACHI EUB-6500 defines new standards for a high degree of environmental friendliness for the whole process from invention, production, operation to recycling. Very important in this context are the labelling of plastic materials, the reduction of polluting substances to a minimum and the low power consumption of the system during operation which results in low heat emissions and reduced noise.

The HITACHI EUB-6500 fully meets the severe ecological requirements of ISO 14001.

training for intuition

As already mentioned, innovation starts in the minds of our engineers and effect our products in many different ways. But a system can only be as good as it is used by its users, innovation does not stop at this point. This explains why our systems can be operated almost intuitively right from the beginning. But don't worry – we won't leave you alone with the better technique and the broader spectrum of diagnostic applications. We offer comprehensive training courses and instructions to make sure that you and your staff learn to work with the EUB-6500 not only intuitively correct but as competent and timesaving as possible. The safe operation of our systems and satisfied customers is part of what we understand by economy.