

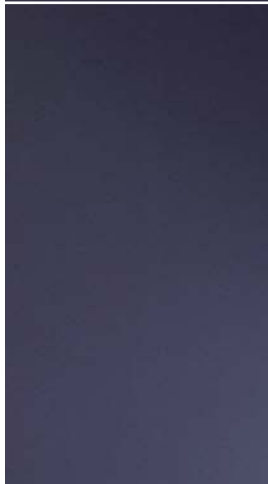
**HITACHI**  
Inspire the Next

**EUB-6500HV**  
Ultrasound Scanner

**EUB-6500 HV**

**Digital Ultrasound Scanner**

**HITACHI Medical Systems**  
The Spirit of Technology





# Intelligence with Speed

## The new HITACHI EUB-6500 HI-Vision

An ultrasound system of the latest generation has been developed and unified through combining state-of-the-art developments in IT technology together with the creative input from our customers.

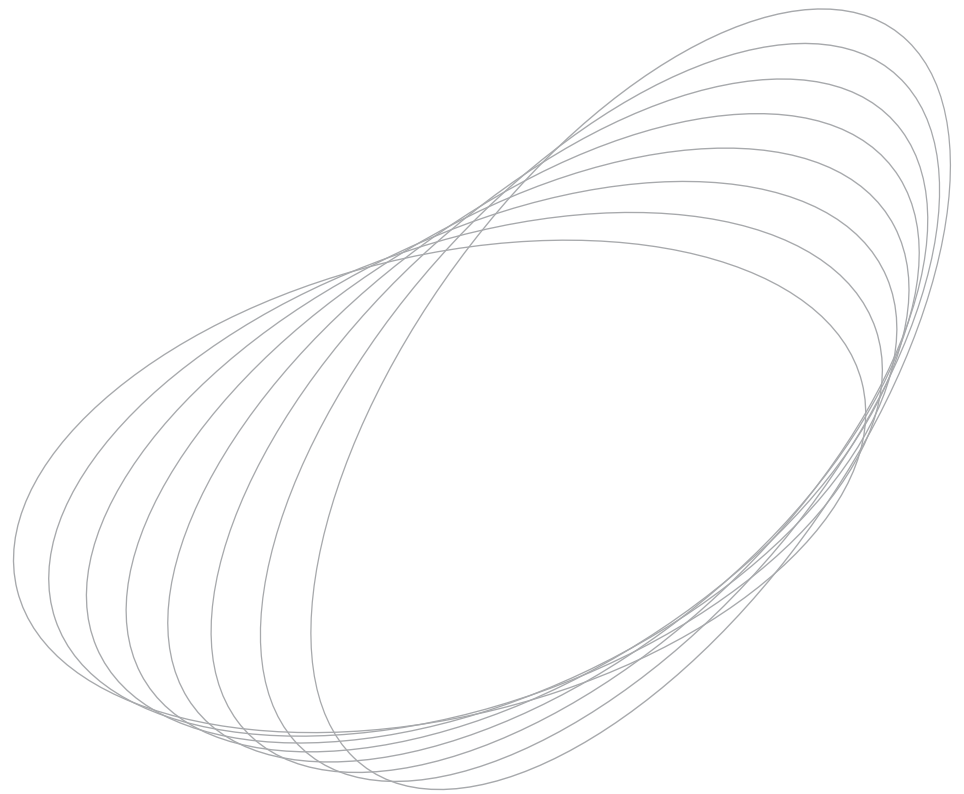
The open architecture design of the system allows integration of some of the most sophisticated and progressive imaging technologies culminating in outstanding clinical performance, whether for routine clinical work or highly specialized examinations. HITACHI's unique technologies including Realtime Virtual Sonography can easily be incorporated into the system.

The exceptional computing power of the HITACHI EUB-6500 HV is based on extremely fast parallel processing enabling precise imaging of anatomical and physiological detail.

**The new HITACHI EUB-6500 HV – a successful combination of high performance ultrasound covering a wide range of clinical applications, user friendly with intelligent data management.**







# HI-VISION

## Applying tomorrow's technologies today

The HITACHI EUB-6500 HV uses the latest technical concepts to define the most advanced standards in diagnostic ultrasound. High performance computing systems provide the foundation for unrivalled signal processing rates. The development of HI-VUE imaging enables parallel processing of highly complex functions in realtime thereby controlling the ultrasound signal with precision for outstanding image quality. In addition, SonoMR imaging technology provides excellent insight into the anatomy and physiology of structures. Key technologies allow even the most subtle acoustic

differences to be displayed with optimal contrast resolution whilst simultaneously maintaining high frame rates that capture rapid, dynamic movements.

**HITACHI EUB-6500 HV – HI-VISION imaging: providing maximum diagnostic information.**

# Key Technologies

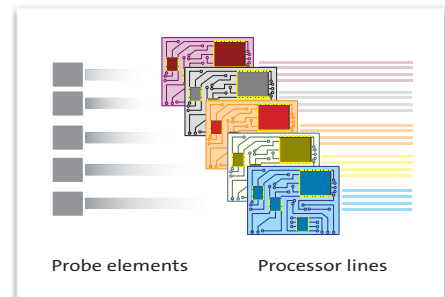
## Innovative high performance imaging

Equipped with state-of-the-art high performance computer systems, multi-parallel processing lines provide the technological foundation for the exceptional signal processing capacity of the HITACHI EUB-6500 HV.

This ultimately results in considerably improved lateral and axial resolution together with enhanced contrast resolution thereby providing the maximum diagnostic information.

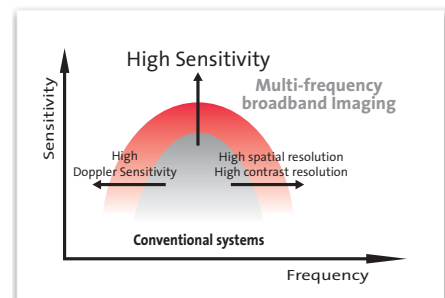
### Gigasampling Technology

12 bit A/D conversion with gigasampling technology allows the ultra fine digitization of the RF signal data in both the amplitude and time domains. Real diagnostic echo signals are therefore separated from interference signals at the beginning of the information chain resulting in unparalleled digital precision.



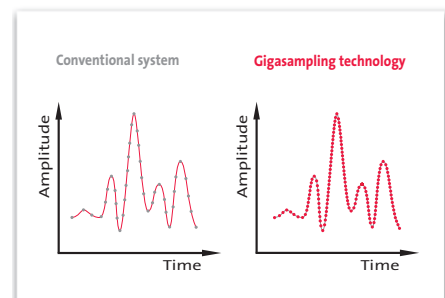
### Multi-frequency broadband imaging

Maximum clinical efficiency together with exceptional versatility for all applications is guaranteed with the multi-frequency broadband imaging of the HITACHI EUB-6500 HV. Wide frequency ranges which are available on all probes provide optimal penetration together with high contrast resolution resulting in exceptional detail throughout.



### Wideband-Pulsed-Inversion (wpi)

With conventional phase inversion techniques, the echoes from two emitted ultrasound pulses with opposite phasing are received and added together. The linear echoes are suppressed whereas the nonlinear high frequency harmonic echo signals are filtered out and used for image acquisition.



In addition during Wideband-Pulse-Inversion the transmitted frequency bands are modulated between two pulses. This technique is applied not only in dynamic Tissue-Harmonic-Imaging (dTHI) but also in dynamic Contrast-Harmonic-Imaging (dCHI) for detection of ultrasound contrast agents.



Native

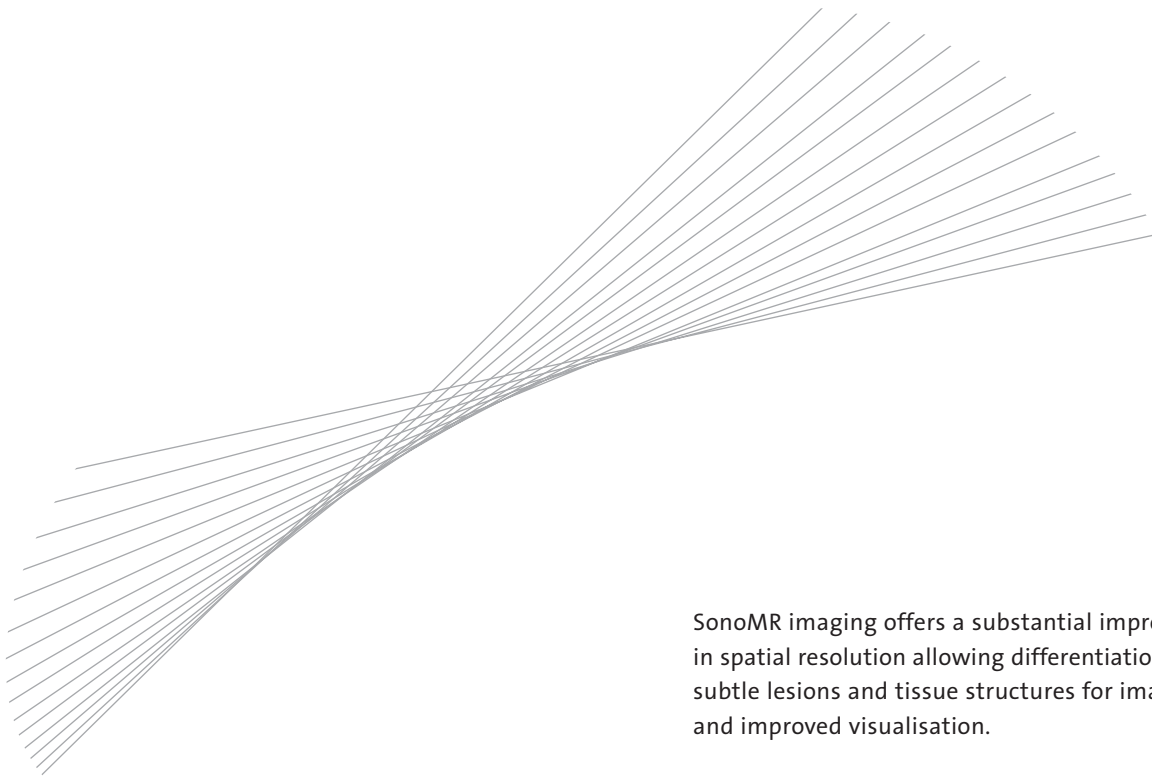
dTHI + WPI



conventional



HI-Compound



### **SonoMR imaging**

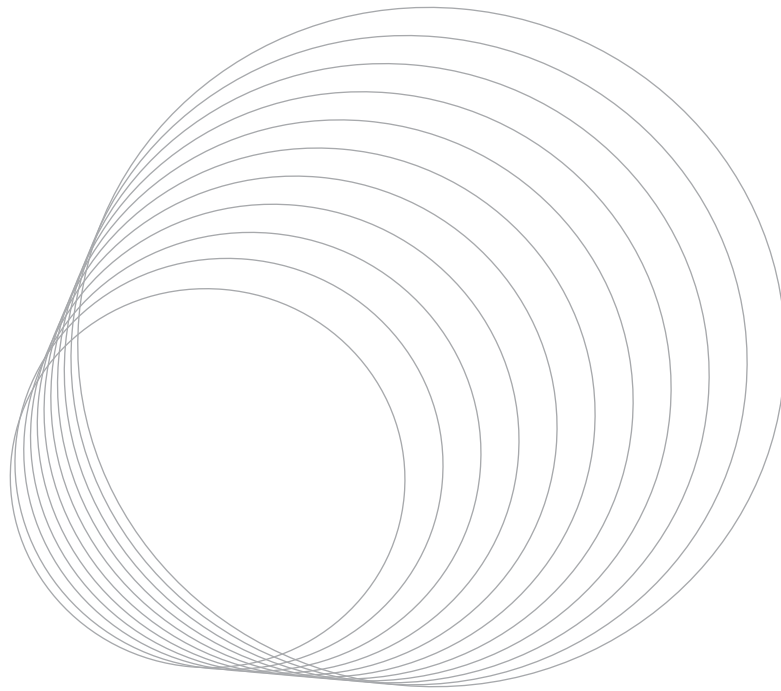
SonoMR imaging is an innovative method to transmit, receive and process ultrasound signals thereby allowing multiple images with different frequencies and from different scanning angles to be displayed as one compound image.

Tissue structures are scanned from different directions with varying frequency bands and the amplitude and phase of the echo signals are subsequently analysed. Complex adaptive algorithms using new calculation methods evaluate structures and differentiate tissue in realtime for unprecedented image contrast.

SonoMR imaging offers a substantial improvement in spatial resolution allowing differentiation between subtle lesions and tissue structures for image clarity and improved visualisation.

Artefacts introduced through noise, interference or shadowing effects are instantly minimized for greater precision and diagnostic confidence. One Touch Optimization using a single key stroke in realtime automatically adjusts depth, gain and dynamic range for a faster, easier and more accurate diagnosis.

### **SonoMR: Setting new standards in ultrasound imaging.**

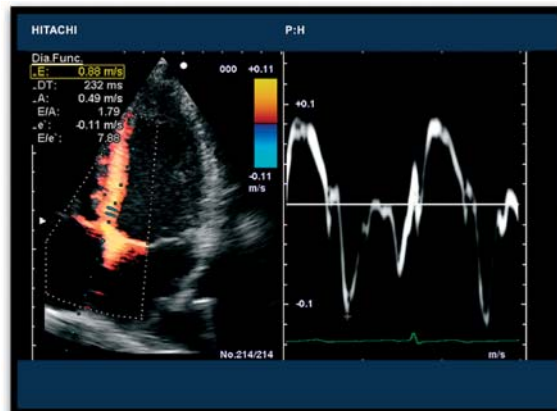


# Clinical Diagnostics

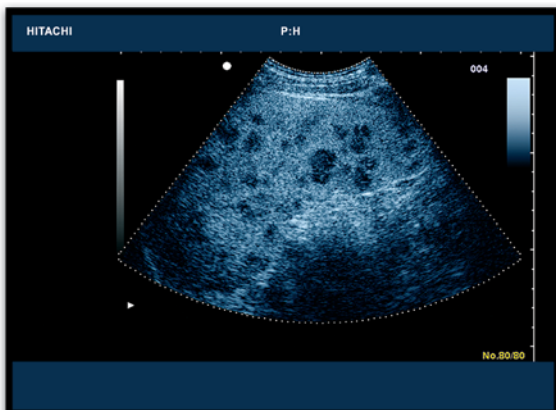
Excellent image quality for maximum information



Facial 4D image of a 3rd trimester fetus.



TDI of the intraventricular septum with PW Doppler display.

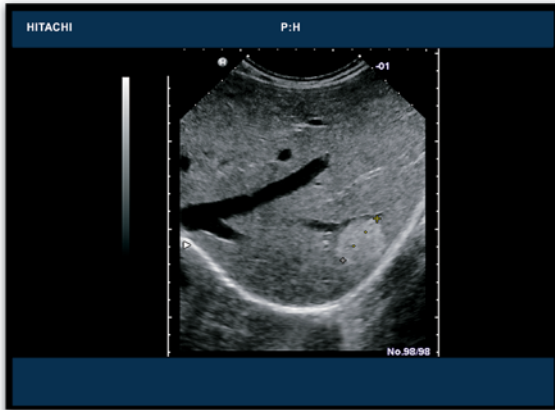


CHI of a metastasizing carcinoma of the colon in a 35 year old patient.



Sagittal section of a normal right kidney.

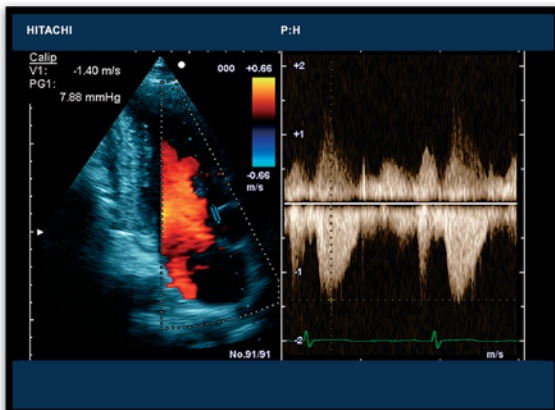




*Oblique section through the liver with a haemangioma.*



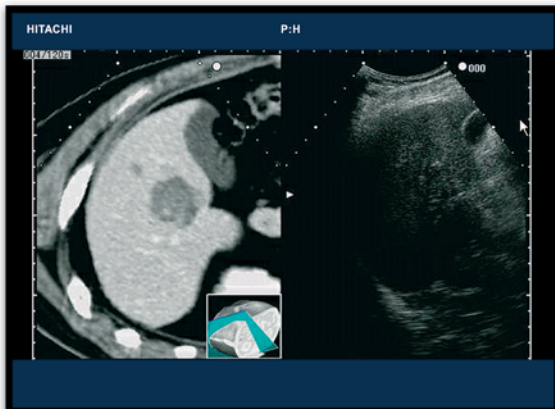
*Clear visualisation of a breast carcinoma using the EUP-L53L with SonoMR.*



*Left ventricle CW Doppler in an apical 2 chamber view.*



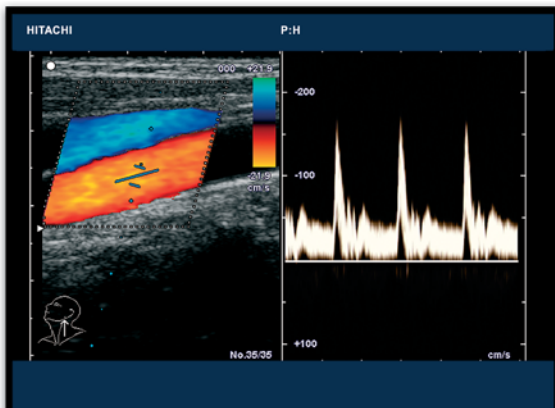
*10 week foetus.*



*Longitudinal section of the right lobe of the liver with a large hepatic lesion.*



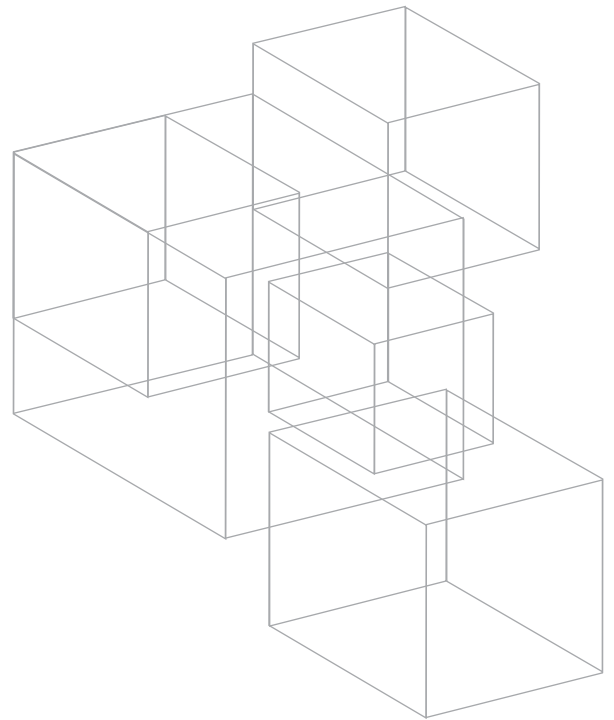
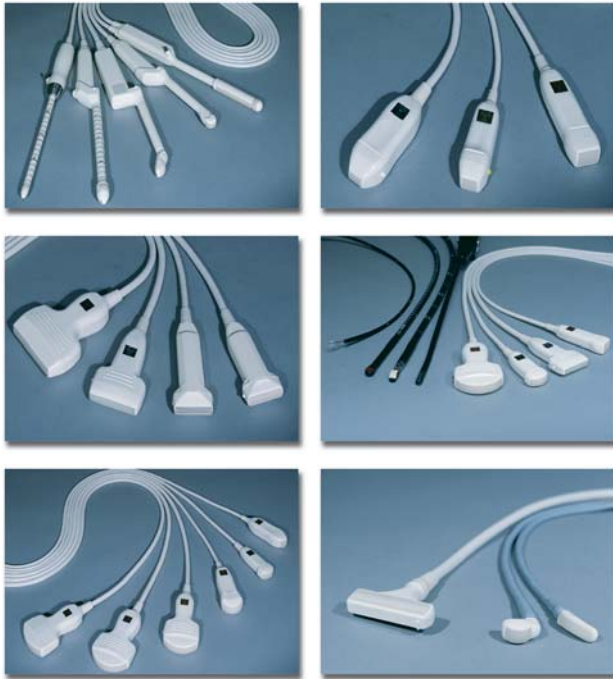
*Transverse section through the right lobe of the thyroid gland.*



*Longitudinal display of the jugular vein and common carotid artery.*



*Hi-Com image of the Carotid Artery with plaque morphology.*



# Diagnostic Features

## Flexibility equates to Innovation and Compatibility

The HITACHI EUB-6500 HV has been developed in order to address maximum diagnostic safety in each and every application from the routine work load through to highly specialised examinations.

### Maximum probe versatility

More than 30 different high performance probes are available, from high resolution linear arrays, curved and phased array through to endovaginal, endorectal and intraoperative probes. The HITACHI EUB-6500 HV is the system of choice for high resolution intraluminal mini probe technology or endoscopic ultrasound requiring electronic radial and longitudinal echo-endoscopes.

### Multi-frequency 4D module

The optional 4D module is also available for the HITACHI EUB-6500 HV for high resolution 3D images in realtime. Captured 3D volumes can be stored, retrieved and manipulated and represented in different modes including 3D-mapping, transparency rendering and multi-planar reconstruction.

The 4D-Mode ensures automatic quantitative volume imaging and measurements from multiple planes for precise 3D-Volume data.



*The multi-frequency broadband transducer offers a frequency range from 8 – 2.5 MHz. Lightweight in design, ergonomically appealing with highly flexible cables for fast, fatigue-free scanning.*

The HITACHI EUB-6500 HV system architecture ensures integration of all possible clinical ultrasound options and can be customised to each user's requirements.

**dynamic Contrast-Harmonic-Imaging (dCHI)**

The dynamic Contrast-Harmonic-Imaging module is particularly easy and efficient for performing contrast agent studies. The system has options for all established methods of Low-MI and High-MI examinations and includes innovative clinical functions that pave the way for next generation contrast agents.

**Realtime Virtual Sonography (RVS)**

Realtime Virtual Sonography allows the simultaneous display of the realtime ultrasound image together with the corresponding multi-planar section derived from a CT or MRI volume data set.

In this way, lesions may be directly compared using different imaging modalities allowing precise monitoring of interventional procedures. RVS is also compatible with colour flow mapping and Contrast-Harmonic-Imaging for the total and complete fusion of MR/CT and ultrasound.

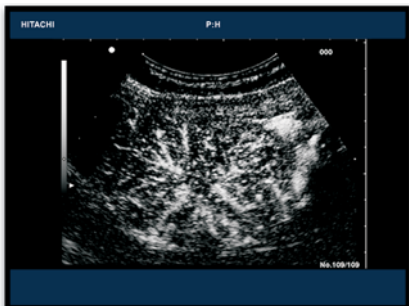
**Cardiology imaging**

The HITACHI EUB-6500 HV incorporates an extensive cardiology package for total qualitative and quantitative analysis.

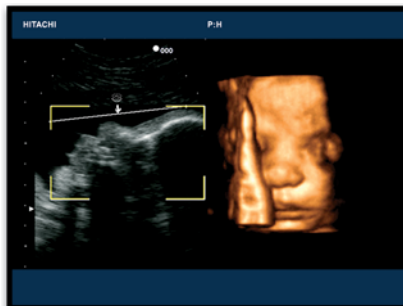
**Real-Time Omnidirectional M-Mode (ODM)** allows the M-Mode to be extracted from any direction and any degree in realtime.

The **Stress-Echo Module** is extremely flexible with advanced cardiac diagnostics allowing user programmable examination protocols to be intuitively set up. The comprehensive reporting system displays clear and concise data for correct analysis.

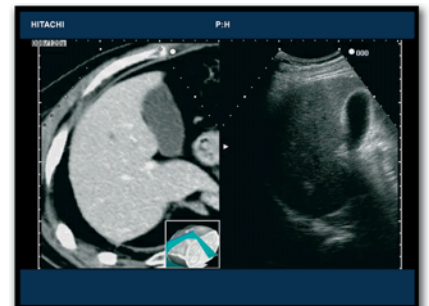
The **Tissue-Doppler-Imaging (TDI)** technique for the measurement of velocity at any point in the ventricular wall during the cardiac cycle provides information on regional wall motion dynamics with high temporal resolution. Quantitative analysis of the myocardium can be calculated with colour encoded velocity maps and quantitative studies of regional wall movements with spectral Doppler.



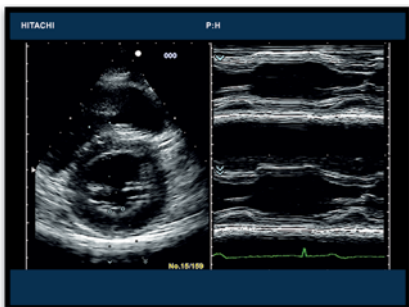
*Dynamic Contrast-Harmonic-Imaging*



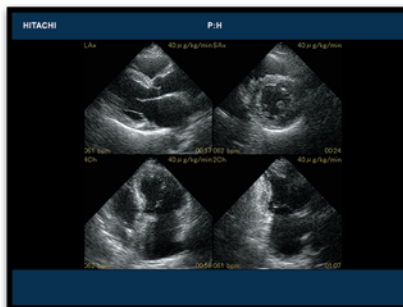
*Multifrequency 4D Mode*



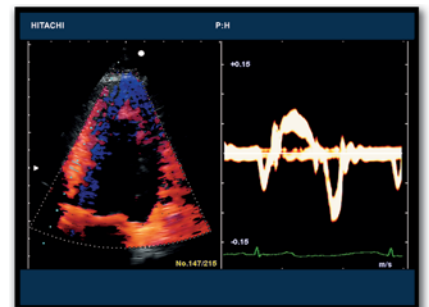
*Realtime Virtual Sonography*



*Omnidirectional M-Mode*



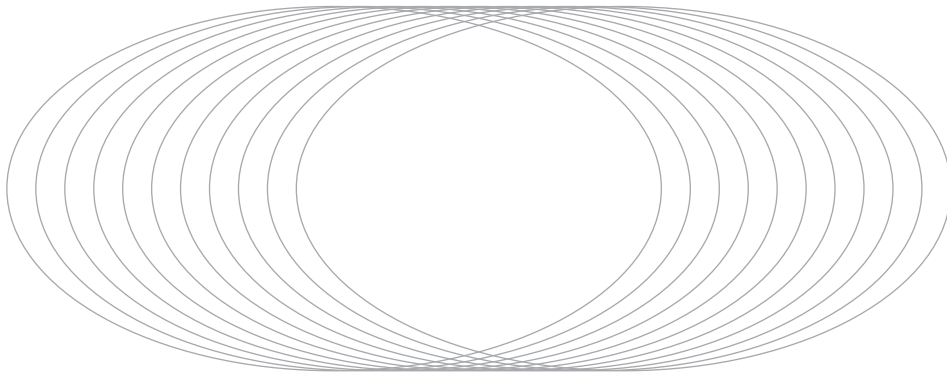
*Stress-Echo Cardiography*



*Tissue-Doppler-Imaging*



*An easily accessible USB port enables data to be transferred rapidly and accurately. The ultrasound images or image sequences are simply saved onto a USB stick or similar USB data carrier and can be downloaded with standard graphic programmes.*



## Workflow-Concept

### Optimization for efficient workflow

Clinicians and patients require accurate, reliable results obtained with speed and precision. This level of performance and ergonomometry is ensured with the HITACHI EUB-6500 HV. The Windows XP based platform is the cornerstone for seamless communication to external clinical data systems providing a highly efficient workflow concept.

Patient data can be directly transferred using a single keystroke. Application-specific set-up on the system offers valuable time saving between patients. Fast switching time between functions, rapid image storage and recall together with immediate digital video capture significantly reduce the workload and streamline the service.

Ultrasound images and video sequences can be stored on a wide variety of different digital media such as DVD, CD-ROM or hospital network environments. The easily accessed USB port for data storage on a USB stick or an alternative USB data carrier offers viable data transfer function.

Stored images or video loops can be evaluated with the extensive analysis and quantification programmes. Images, measuring data and reports can easily be printed using a PC printer compatible with the system. Image storage uses standard graphic formats for contiguous reproduction through presentation software or word processors.



The HITACHI EUB-6500 HV can be integrated into clinical network environments with alternative image and measurement data functions – from direct peer-to-peer connection through to extensive DICOM functions some of which can be used even in a mobile situation.

**Workflow concept of the HITACHI EUB-6500 HV:  
Perfection in efficiency and productivity combined  
with ergonomically sound principles.**

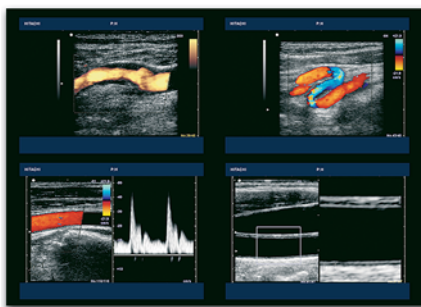
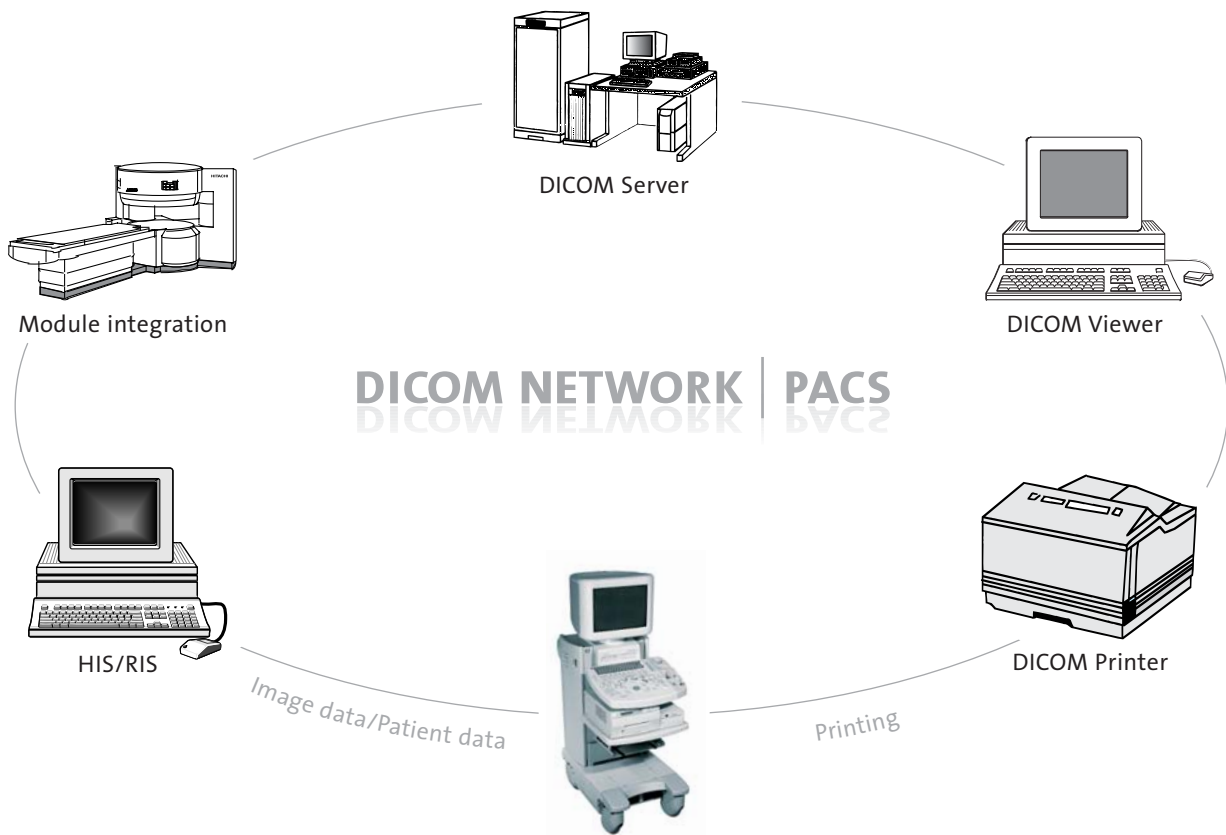


Image overview, Findings comparison

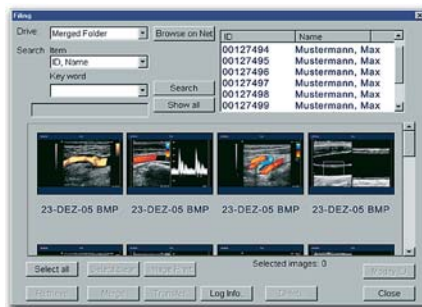
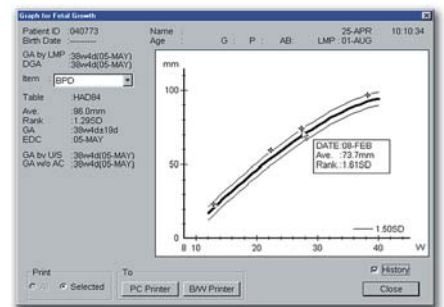


Image and patient database



Patient data



# Environment

## Acting responsibly through thinking providently

Exemplary diagnostic safety, quality and environmental awareness have at all times formed HITACHI Medical Systems core values as well as working for environmental protection and compliance with environmental standards which are the responsibility that every company bears within our society.

The HITACHI EUB-6500 HV has followed the same exceptionally high standards. This is

evident for example, by the identification marking of plastics for subsequent recycling, reducing unnecessary substances to the absolute minimum, extremely low energy consumption, low heat output and reduction in noise levels.

The HITACHI EUB-6500 HV complies with the stringent guidelines of environmental standard ISO 14001 in every way.





# System Training

## A subject close to our hearts

Medical systems will only operate successfully if they are used effectively. Although our systems are designed to be operated intuitively, we do much more:

As a matter of course, we offer full system training, not only for the end-user but also the support staff. This allows the HITACHI EUB-6500 HV to be utilized to its full potential using the technologies in a correct, competent and time efficient way, because at the end

of the day, safety and satisfaction equate to diagnostic reliability and efficiency.

Our experienced team of product specialists are on hand to answer specific, specialized questions that may arise as well as helping with troubleshooting queries, study days, seminars, alternative suggestions or simply tips and tricks to maximise the full potential of the system.



**HITACHI**  
Inspire the Next

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HITACHI Medical Corporation, Medical Systems Operating Group, is certified as complying with the International Standard of System Quality Assurance (ISO 9001), Medical Device Special Requirements (ISO 13485) and etc.

HITACHI Medical Corporation, Medical Systems Operating Group, has been certified to ISO 14001 (Environmental Management Systems).

Specification and physical appearance may be changed without prior notice for improvement of performance. Be sure to read instruction manual for correct operation of the requirement.