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EUB-7500 HV

A compact, high-end platform

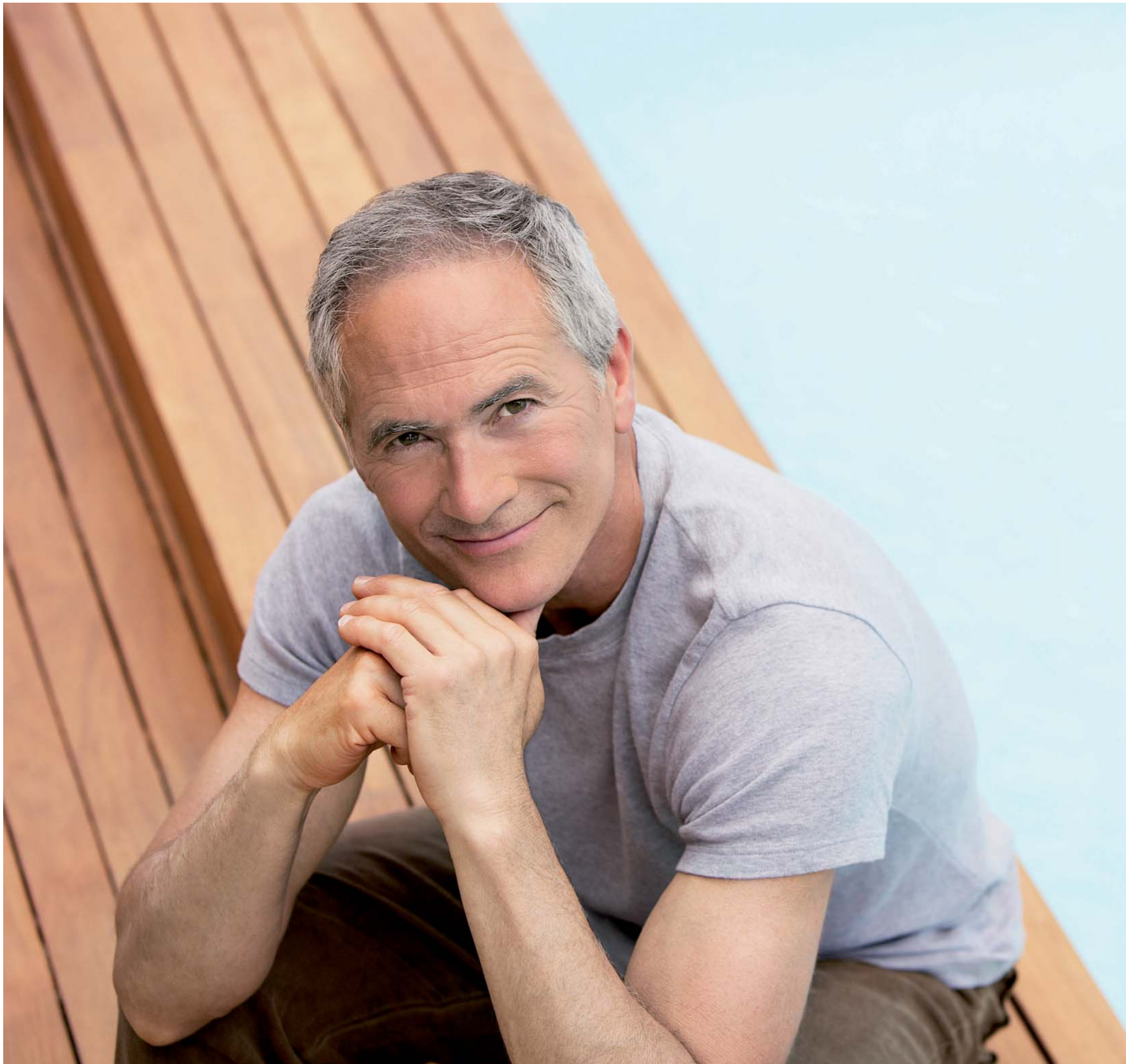


Hitachi Medical Corporation, Medical Systems Operating Group, is certified as complying with the International Standard of System Quality Assurance (ISO 9001), Medical Device Special Requirements (ISO 13485) and etc.

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

Specifications and physical appearance may be changed without prior notice in order to improve performance. Please read instruction manual to ensure correct operation of the equipment.





EUB-7500 HV – a compact, high-end platform

Hitachi Medical Systems presents the EUB-7500 HV, a compact and affordable platform with outstanding performance. The most powerful system in its class, the EUB-7500 HV supports all mainstream applications, and in addition, gives access to premium-level features like Hitachi Real-time Tissue Elastography (HI-RTE), Real-time Virtual Sonography (RVS), and sophisticated cardiac tissue-tracking modalities.



Hitachi Medical Systems Europe is the European headquarters of Hitachi Medical Corporation whose corporate headquarters are located in Tokyo, Japan; a company renowned for technological innovation. Our broad experience and expertise in ultrasound imaging makes us a recognized leader in this field, meeting the latest design and quality standards, combined with outstanding image quality and advanced clinical applications.

EUB-7500 HV – Advanced Product Features

The compact design of the EUB-7500 HV, together with superior image processing for outstanding clinical performance, makes it a unique platform that provides a wealth of diagnostic information for multiple clinical areas, including radiology, obstetrics/gynaecology, internal medicine, cardiovascular and endoscopic ultrasound (EUS).

Flexible hardware and software enable you to customize the platform to meet the demands of your examination, whatever your clinical environment. A 19" digital LCD supported on a flexible arm permits maximum rotation and adjustability, and a new generation graphical user interface allows the operator to control the examination from the monitor and trackball, so enhancing workflow in the scan room. Options such as a handheld infra-red remote control, speech recognition software and picture-in-picture become essential components of your safe working environment in more demanding interventional or sterile areas.



Ultrasound Cockpit

With the 19" LCD, the EUB-7500 HV supports Hitachi's new graphical interface, the Ultrasound Cockpit. All the controls are arranged in front of the user similar to a cockpit, so with a 'point and click' PC style interface, the system can be operated from on-screen icons. A thumbnail image gallery displays current and stored images for easy comparison. The operator can customize his display so that only desired functions are in view, and the full exam can be performed without taking your attention away from the ultrasound image.



Ultrasound Cockpit Display
 Detail of the 'compare screen': any image from a previously stored study can be reviewed alongside the current image. Image playback, zoom, pan and full-size display modes are available.

Infrared Remote Control*

Lightweight yet fully featured for comprehensive system control no matter what the clinical needs. An innovative watertight design allows for easy cleaning for use in any environment, including sterile fields.

Voice-activated Bluetooth Operation*

Command and control with voice recognition via a Bluetooth headset allows total focus on the patient and procedure. The need to move the system in order to avoid potentially harmful operator positioning is eliminated.



Digital Video Archiving Software*

Hitachi has developed a new capture board and software which gives you all of the functionality of an external DVD recorder on your hard drive. Up to 4 hours continuous recording in MPEG2 format is possible, direct to the hard drive or DVD-RAM. Other features include: quick search/review, Doppler sound recording and variable playback speed.

*Optional

EUB-7500 HV – HI Vision Imaging

Optimal image quality with tomorrow's technology. All clinical applications catered for with accuracy and precision. So that your eye misses nothing.

HI Rez+

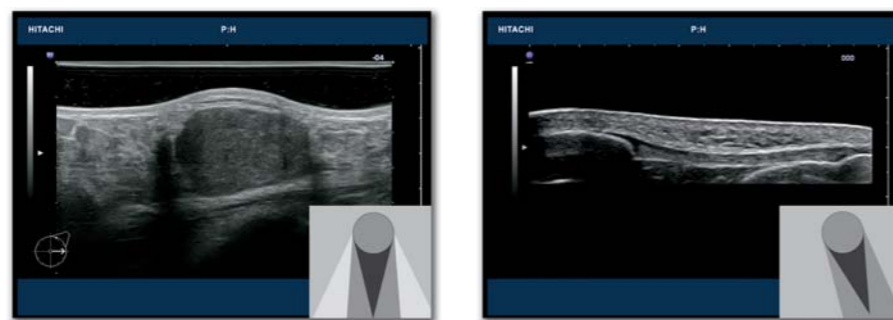
This high resolution tissue adaptive filtering technique performs tens of thousands of spatial imaging processing operations in real time using a dedicated high speed ASIC calculator and ultra-high speed algorithm. Real tissue echoes are enhanced and given a more uniform appearance whilst noise and clutter are significantly reduced even in the most difficult-to-image patients.

HI Com / Steering HI Com

Both frequency and spatial compounding techniques are combined with HI Compound imaging, resulting in exceptional contrast and detail resolution with improved visualisation of interfaces and organ boundaries, allowing greater diagnostic confidence.

Example of a small breast fibroadenoma – perfect border delineation and improved contrast resolution is achieved with HI Com.

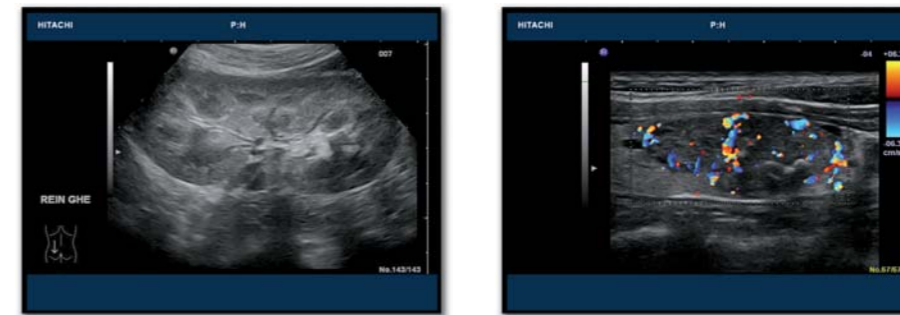
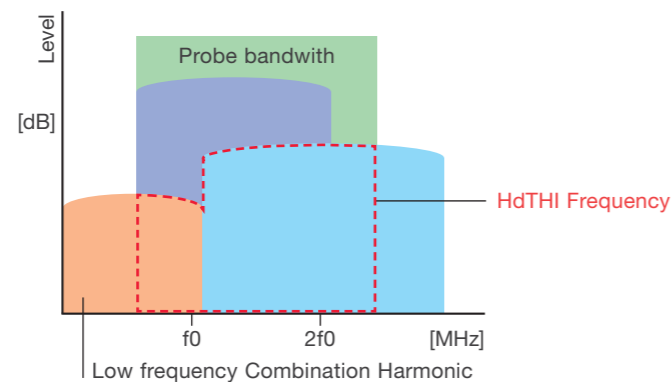
With Steering HI Com, the linear fibres of this patellar tendon are well delineated as it passes over the head of the tibia.



With the latest addition, Steering HI Com, the operator can choose the steer angle so significantly improving the visualisation of biopsy needles or reducing the effect of anisotropy.

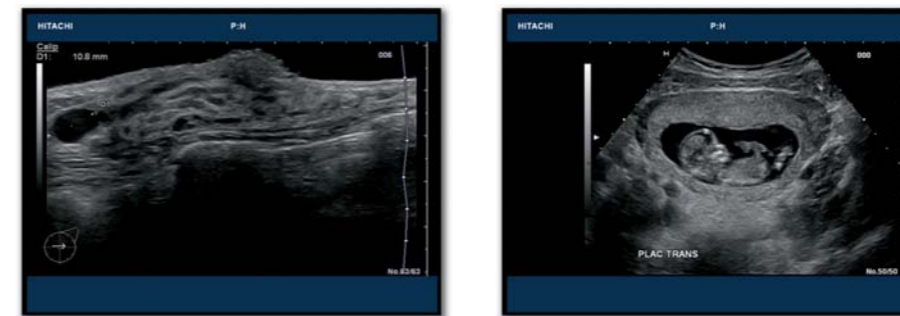
High Definition dynamic Tissue Harmonic Imaging (HdTHI)

Thanks to the improvement in Hitachi's broadband technology, the non-linear receive components induced by the wideband transmit pulse include low frequency sub-harmonic signals in addition to the second harmonic frequencies. Improved resolution and penetration is achieved over conventional pulse inversion technology.



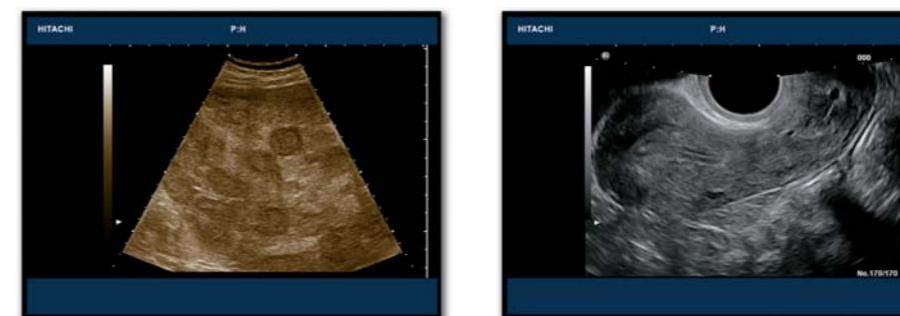
The full value of HI Vision imaging can be appreciated with the outstanding contrast resolution in this image of a paediatric kidney.

The power of the EUB-7500 HV ensures a simultaneous display of the highest Doppler sensitivity and B-mode image quality, as seen in this thyroid nodule.



The unique 92 cm linear transducer allows a rapid evaluation of the breast in its anatomical alignment. Here a dilated duct with a small cyst is seen at 9 o'clock.

Detail of the fetal brain and limbs and placental localisation are clearly seen with HI Vision imaging in this 12 week gestation, imaged trans-abdominally.



B-mode colour can further enhance the contrast resolution as seen in this liver with multiple metastatic deposits.

With the endovaginal transducer, the uterine body is perfectly delineated from fundus to cervix and superb differentiation of the endometrium is seen.

Hitachi's new transducers

Few advances in ultrasound imaging can be attributed to system hardware alone. Advances in transducer technology go hand-in-hand with innovations in signal processing.

Hitachi's transducers are manufactured in-house using the latest multilayer composite materials with wide bandwidths, enabling multiple selectable frequencies for native B-mode, tissue harmonics, colour and pulse wave Doppler. Ergonomic design, light-weight housing materials along with cable flexibility and length minimise the strain on the hand and wrist.



Specialist transducers recently introduced to the range include the endoscopic bronchial transducer, and the latest 7-Series probes bringing expanded bandwidths for abdominal, cardiac and superficial imaging.

EUB-7500 HV – Advanced Modalities

Whether mainstream applications or premium-level modalities – the EUB-7500 HV is versatile and intelligent. Rediscover ultrasound.



Hitachi Real-time Tissue Elastography (HI-RTE)* – the new modality for the assessment of tissue elasticity

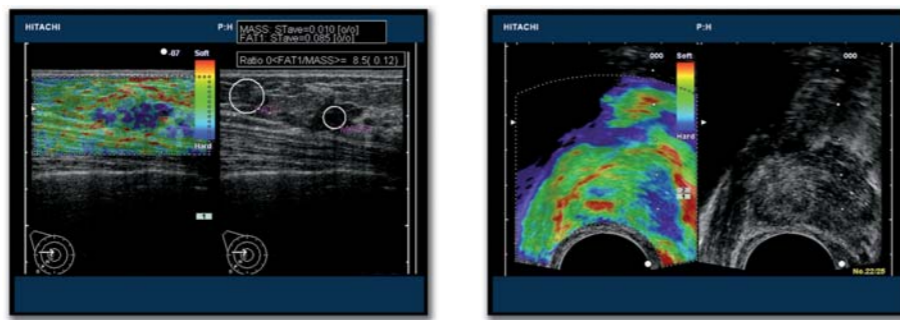
By offering additional information about the tissues' stiffness, Hitachi's proprietary technique improves the visualisation of tumours and further aids the differentiation between benign and malignant disease.

In breast applications, HI-RTE has a complementary diagnostic role to the conventional B-mode, increasing the specificity by adding new benign criteria and thereby reducing the number of further, unnecessary diagnostic procedures.

This 2nd generation real-time elastography includes the Strain Ratio measurement, providing an objective quantification of the strain within a lesion compared to the normal surrounding tissues for further research into tissue characterisation. HI-RTE is available for a wide variety of transducers and its diagnostic value has been proven for many clinical applications:

HI-RTE image of ductal carcinoma in situ. The strain ratio confirms the stiffness contrast between the lesion and the surrounding normal breast tissues.

HI-RTE clearly identifies an area of increased stiffness in this prostate gland. Following targeted biopsy, a tumour, Gleason score 7, was confirmed.



Let 4D* imaging help you see and understand more

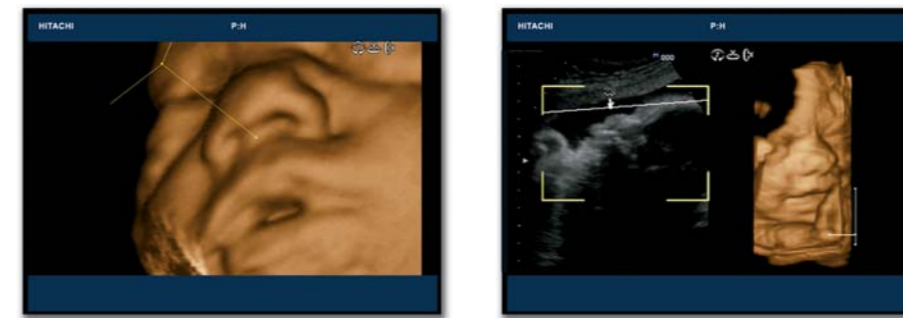
4D imaging is supported on the 7500 HV platform by dedicated lightweight, ergonomic transducers capable of the same level of HI Vision signal processing as our standard 2D transducers.

MPR – any plane can be viewed full screen or in a quad display with its complementary orthogonal planes for accurate linear or volume measurements, or for accurately guiding intervention.

In the dual display of B-mode and real-time 3D, positioning the flexible view line, setting the 3D ROI, rotation of 3D image and choice of rendering (surface, transparency, maximum or minimum intensity projections, skeletal mode) ensure quick, real-time acquisition of volume data.

HI DEF 3D mode, and further post-processing of stored volume data (scalpel function, smoothing, shading, brightness, colourisation and rendering mode) allow optimal 4D display.

Raw volume data can be saved to the internal hard disc or external storage media, and easily retrieved for further manipulation. Previous adjustment of parameters can be recorded with the stored data allowing return to an earlier reconstructed view.



The lips and nose of this third trimester fetus are superbly displayed in the surface rendered mode.
Dual image with live B-mode for positioning the view line on the left and the resultant real-time 3D image simultaneously displayed on right.

dynamic Contrast Harmonic Imaging (dCHI)*

The **Wideband-Pulse-Inversion (WPI)** developed by Hitachi offers increased agent to tissue specificity by modulation of both the phase and the transmitted frequency between pulses. The advantages: significantly improved lateral and contrast resolution without compromising axial resolution. The frequency modulation results in greater sensitivity at depth compared with conventional harmonic imaging methods.

Microbubble Trace Imaging (MTI) Micro-vessel morphology can be seen in fine detail and tumour characterization improved using the microbubble trace imaging accumulative enhancement mode. In addition, flash-replenishment sequences can be customized for each examination.

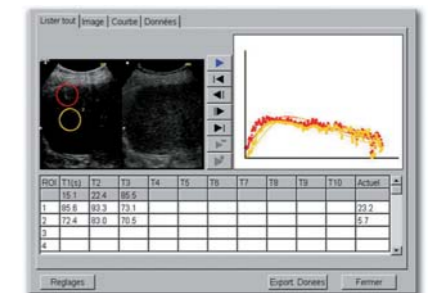
Time Intensity Curves (TIC) can be generated from the stored clips to display contrast agent enhancement over time within multiple selectable ROIs. Parameters such as time to peak and amplitude of enhancement can be derived using best fit analysis techniques, and all data can be exported as an Excel file for further off-line analysis.



Early uptake of contrast agent is seen in the rim of this liver lesion. The dual display includes a low MI tissue image for reference.



An incidental benign splenic lesion assessed using the microbubble trace imaging (MTI) mode.



Time Intensity Curves can be generated from the stored data.

Real-time Virtual Sonography (RVS)* – the intelligent fusion of ultrasound and CT/MR imaging

Hitachi's Real-time Virtual Sonography enables the simultaneous real time display of a free-hand ultrasound image together with the corresponding multiplanar reconstructed (MPR) view from the pre-operative CT or MR volume data set. This innovative imaging technology gives a better understanding of the ultrasound imaging anatomy, provides a direct comparison of lesions using different imaging modalities, improved accuracy of needle placement for interventional procedures, and more precise monitoring of interventional procedures without additional radiation exposure.

Available with a full range of abdominal, dedicated biopsy and high frequency linear transducers.

*Optional

EUB-7500 HV – Innovative, multi-disciplinary technologies

Time-saving, effective and economical. Outstanding technologies for multi-disciplinary applications. Let your mind take you one step further.

Hitachi's range of applications is innovative and inspired, with more than 40 transducers, tailored to specific requirements, always providing you with the best solution.

With convex, linear, 360° radial array with 256 element technology wideband transducers, we offer unparalleled versatility for all applications, from radiology, obstetrics/gynecology, and internal medicine through to superficial, and cardiovascular. Highly specialised transducers support endoscopic, biopsy, endorectal, laparoscopic, intra-operative, and intraluminal investigations.

Discover the unlimited possibilities of all in one Endoscopic Ultrasound imaging

Over the years, Endoscopic Ultrasound has become more and more important. Modern endosonographic imaging represents a minimally-invasive technique which delivers high resolution images and thus significantly contributes to therapeutic decisions. Hitachi pioneered the development of diagnostic and interventional endoscopic ultrasound instruments and today offers a broad range of electronic radial, longitudinal and miniprobe endoscopic ultrasound transducers.

The latest technological developments in this field are manifest in the new EBUS scope EB-1970 UK for the diagnosis and staging of mediastinal lymph nodes, using advanced fine needle aspiration guidance and high performance "chip in the tip" endoscopic image generation for efficient and precise results.

Hitachi's imaging technologies, including HI-RTE, and other breakthrough developments such as HI Rez+, HI Com, HdTHI, dCHI as well as state of the art endoscopic image processing are used in our range of endoscopic ultrasound instruments, offering you maximum diagnostic confidence.

- EUP B514**
Dedicated biopsy transducer with thro' crystal needle guide
- EUP B512**
Small footprint biopsy transducer



- EUP R54AW**
Electronic radial rectal transducer with 360° field of view
- EUP U533**
Linear/convex Bi-Plane transrectal transducer



- EUP CC531**
Convex/convex Bi-Plane transrectal transducer
- EUP OL531**
Laparoscopic transducer with sterile working channel



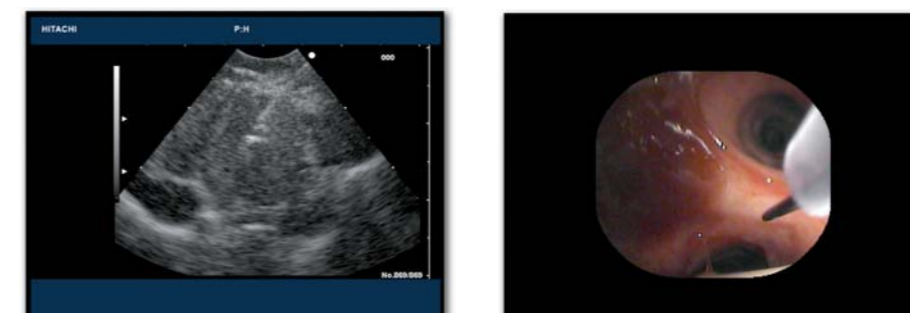
- EUP O53T**
Intraoperative T-shape transducer
- EUP O54J**
Intraoperative 'hockey stick' transducer



- 360° electronic radial colour Doppler image, showing oligocystic pancreatic adenoma.
- Endoscopic Ultrasound guided fine needle aspiration (FNA) of a pancreatic mass.



- High resolution 360° electronic radial endoscopic image clearly demonstrating the different mucosal layers.
- Simultaneous side by side display of the endoscopic view and ultrasound image of a cyst of the gastric gland body.



- Electronic bronchoscope guided fine needle aspiration (FNA) of a mediastinal lymph node.
- Video endoscopic view during Electronic bronchoscope guided FNA.

EUB-7500 HV – Dicom Connectivity

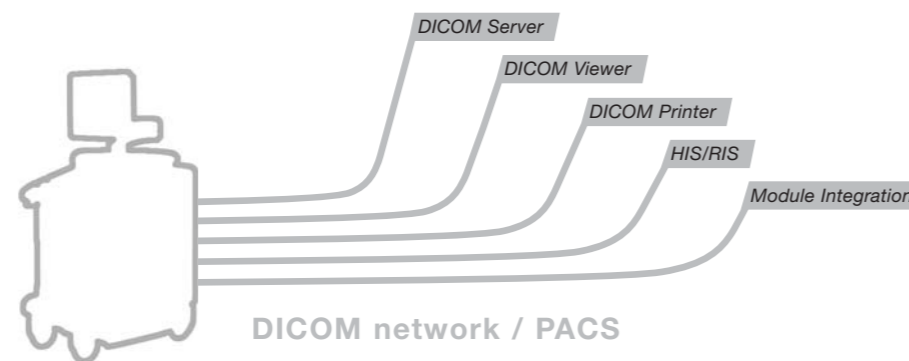
Data transfer and archive are important – in networks and providing connectivity between modules. Discover leading-edge technology in practice.

Digital Image Archive

Motion clips or still images can be stored to the on-board patient management database. A comprehensive search engine using name, date, keyword, etc is available, with image review in full screen or multiple image formats. Data can be transferred to an extensive choice of digital media with an option of file formats. Masking of the patient's name and ID is possible at point of transfer.

Network connectivity

Full DICOM connectivity allows you to interface with PACS and other image management systems providing worklist, storage, query/retrieve and print options.



Ultrasound Image Viewer

Hitachi offers a software solution for image management and off-line measurements. With the Ultrasound Image Viewer software and a PC, it is possible to retrieve stored images via a network, perform measurements, and generate customised reports. This software is easy to use, offering a display that mimics the ultrasound system.



Hitachi Medical Systems values and services

Hitachi Medical Systems combines high technology with the Asian tradition of long-term thinking, a high level of consciousness for quality aspects and the subsequent understanding of service.

In building valuable, long-term relationships with our customers, we have achieved an understanding of their different needs and expectations. This has strengthened our commitment to deliver high quality products that fulfil the requirement, whatever the clinical specialty. We provide a one-to-one service to secure first-class customer satisfaction. The close working relationship with sales and applications, as well as other key members of Hitachi Medical Systems, guarantees you an appropriate reaction and fast response. We always endeavour to 'go that extra mile'. We succeed because we keep an open mind to new ideas, products and services.

Services such as our 360° educational programme, the Hitachi Medical Systems Technology Academy – offering tailor-made, added-value services and solutions for professionals in all fields of medicine, and other interested groups.



We abide by the corporate philosophy believing we have a social responsibility to protect our environment so that the next generation has a firm grounding on which to build a secure future.

EUB-7500 HV – specifications

1 Clinical Applications

Abdominal
 Paediatrics/Neonatal transfontanelle
 Small parts (breast, thyroid, testes, etc)
 Musculoskeletal
 Obstetrics/Gynecology
 Gastroenterology
 Urology
 Rectal
 Adult and paediatric cardiology including transoesophageal
 Vascular
 Transcranial
 Intraoperative
 Laparoscopic

2 Advanced Imaging Capabilities

HI VISION imaging:

- dynamic Tissue Harmonic Imaging
- High Definition dynamic Tissue Harmonic Imaging
- HI Com: real-time image compounding
- HI Rez+ : real-time tissue adaptive filter

HI Support B and PW auto-optimisation
 dynamic Contrast Harmonic Imaging
 Tissue Doppler Imaging (TDI)
 Panoramic Imaging (WideView)
 3D and Real-time 3D imaging
 Real-time Virtual Sonography
 Hitachi Real-time Tissue Elastography (HI-RTE)
 Real-time Bi-Plane Imaging
 Picture-in-Picture
 Dual Gate Doppler

3 Advanced Measurement Package

%WT measurement
 Colour tissue tracking
 IMT measurement
 M-mode navigation

4 Special Features

19" digital LCD display on flexible arm for maximum rotation, tilt and height adjustment
 Option of 17" CRT
 Cockpit display - graphical user interface
 Independent swivel/locks on all four wheels
 Option of waterproof remote control operation
 Option of voice-activated Bluetooth operation
 Digital storage: Hard disk, DVD-multi drive, USB (2 ports), Floppy drive
 Image Format: BMP, TIFF, JPEG, DICOM
 CineLoop Format : AVI (non compressed and compressed), DICOM
 Option of up to 4 hours continuous recording to hard drive or DVD-RAM in MPEG2 format
 DICOM 3: Store, Print, Modality worklist, Query/Retrieve
 Patient Management Database

5 Power requirements

Power supply: 230V (±10%), 50 or 60Hz
 Power consumption: 1.2 kVA
 Dimensions: 500mm x 850 x 1460 -1640mm (WxDxH)

6 Standards

Conforms to ISO 9001: design, fabrication, distribution
 Conforms to ISO 14001: environmental protection



EUB-7500 HV – a compact, high-end platform