

HITACHI

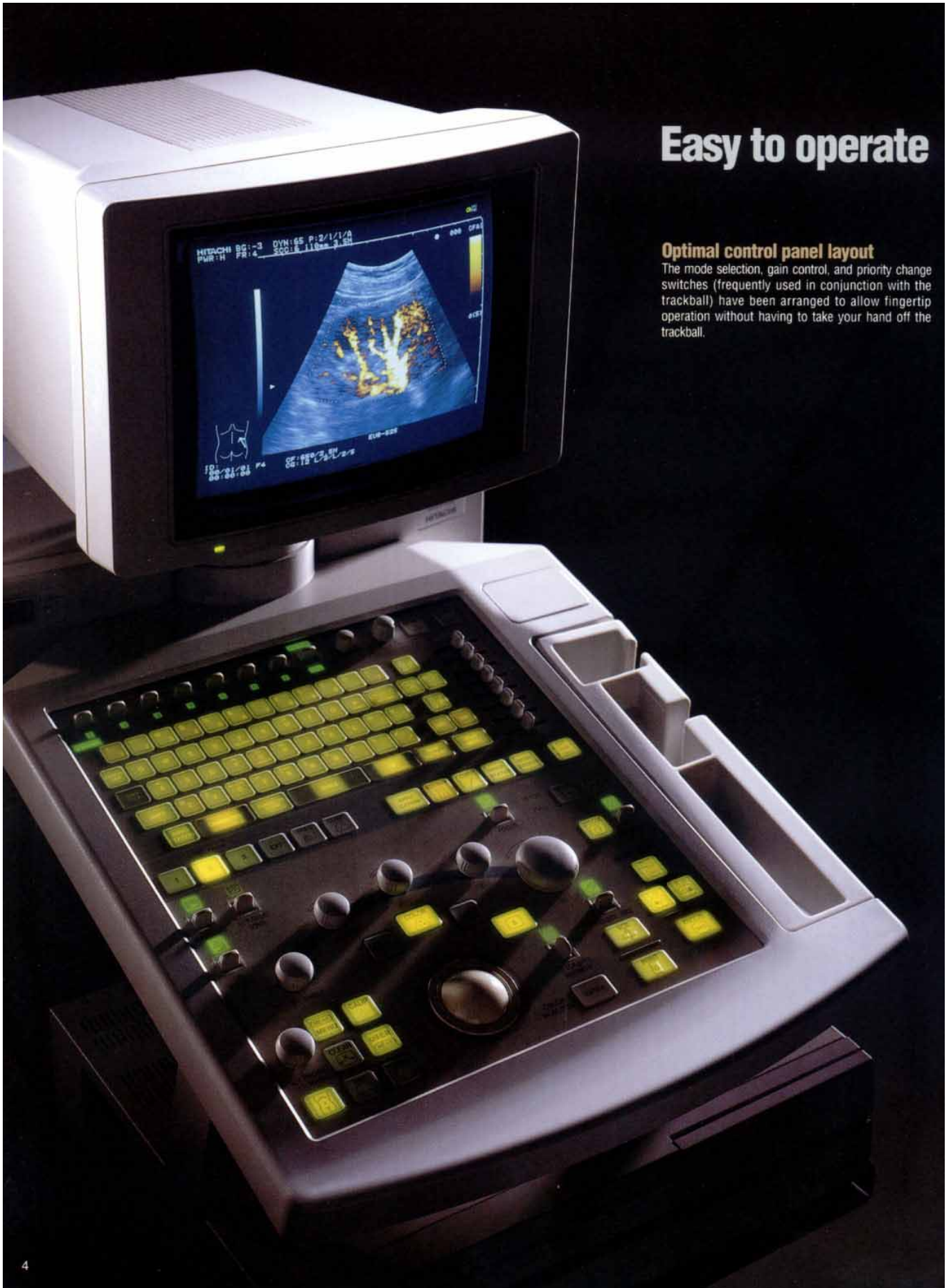
Ultrasound Scanner **EUB-525**



Easy to operate

Optimal control panel layout

The mode selection, gain control, and priority change switches (frequently used in conjunction with the trackball) have been arranged to allow fingertip operation without having to take your hand off the trackball.

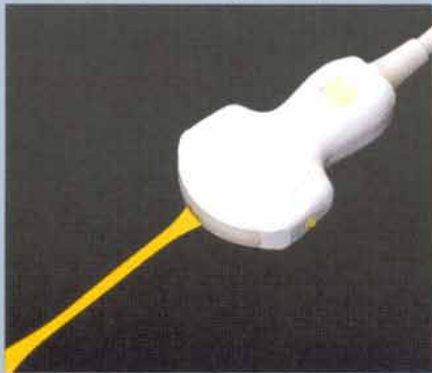


Designed for convenience

Packed with thoughtful features to enhance examination efficiency and reliability

Continuous dynamic focusing

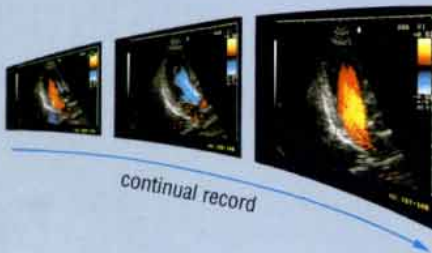
An eight-step changeover, transmit-focus system -- combined with a continuous dynamic variable-aperture receive-focus system -- provides highly precise beam formation through continuous control of the receive focal point and beam aperture. The result? Consistently sharp, clear images at all depths of field.



Captures even momentary motion

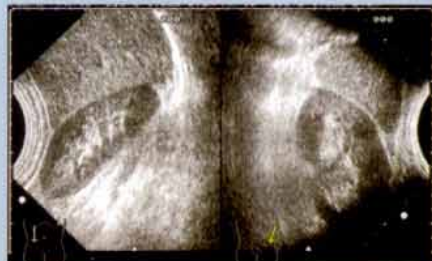
● Continually records to memory the preceding two-seconds of every image frame, so even momentary motions won't be overlooked. Just freeze the image you want to examine and use the trackball for easy review.

● In the 2.5-sec. mode, 40 seconds worth of M-mode and Doppler images can be stored, allowing you to concentrate on acquiring optimal images for review later. Measurement is also possible.



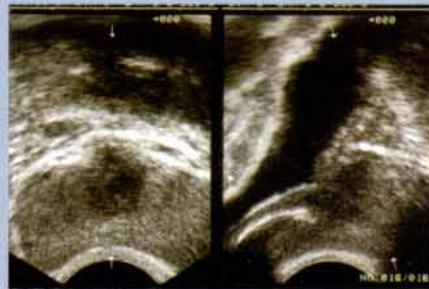
Proper orientation

Top/bottom, right/left inversion and 90° rotation give clinical users the benefit of observing anatomical parts in their correct orientation. Makes hand/eye coordination a much simpler exercise.



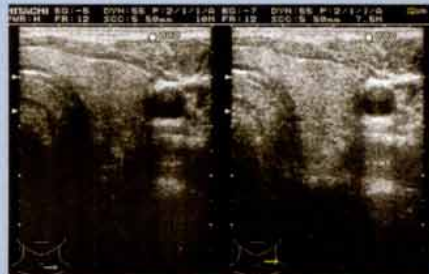
3-dimensional observation

The real-time biplane imaging function, an exclusive Hitachi feature, permits simultaneous imaging of the axial and transaxial planes via an innovative probe with dual heads.



Dual-frequency probe

When deeper penetration is required, a single push of the frequency key is all that's needed. The 10 MHz, 7.5/6.5 MHz, 5.0 MHz, and 3.5 MHz probes are all capable of scanning at different frequencies (7.5/5.0/3.5/2.5 MHz), so there's practically no need for switching probes.



10MHz

7.5MHz

Fisheye-view scanning

The curved array endocavity probe provides a 200° scan angle. This fisheye view helps in spotting small details on the periphery that may otherwise be overlooked during a screening exam.



State-of-the-art color imaging technology

Greatly expands the effective parameters of ultrasound diagnosis, even basic CFM. A revolutionary innovation!

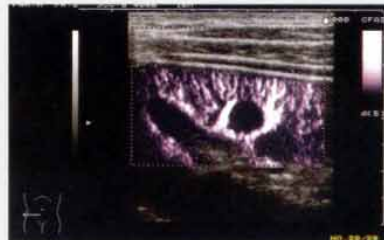


Color Flow Mapping (CFM)



Provides real-time observation in color of the dynamic state and characteristics (flow direction, velocity, velocity variance, etc.) of the blood flow in the abdominal, vascular, and other regions.

Color Flow Angiography (CFA)



Obtains image from the reflection intensity of blood flow signals, and displays it overlapped on a B-Mode image. Effective for detecting very slow blood flows, such as that in small vessels, since the image is independent from blood flow velocity.

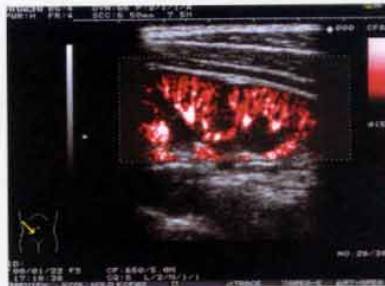
Color hold mode display



Large cine memory capacity enables multilayered storage of selected color flow images for later retrieval and review. Depicts all vessels, even peripherals, without motion artifact disturbance.



Peak hold mode display



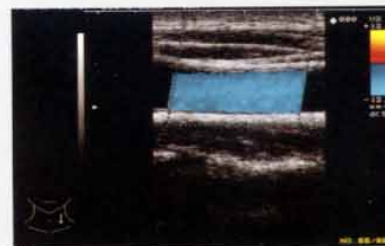
Color flow images can be accumulated continuously for real-time observation. Time spans are selectable -- 1 sec., 2 secs., 4 secs., or infinite -- and at the end of the given span, a fresh sequence of images is provided. Extremely useful, particularly for complicated screening exams.

B-color imaging



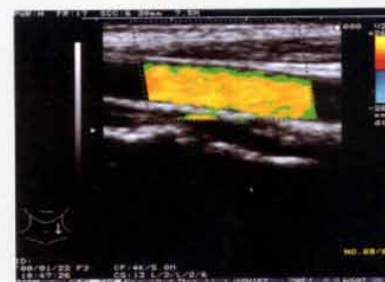
Enhances observation and detection by highlighting in subtle shades and hues. Much easier on the eyes than monochrome depiction.

Oblique scan using linear probe



High-quality color Doppler images of oblique superficial blood vessels can be acquired by using the 7.5 MHz and 10 MHz linear probe, all while maintaining the basic function of providing high-resolution B-Mode images.

Enhanced display of arbitrary flow speed



In addition to normal CFM, regions of any arbitrary flow rate can be displayed in varying colors, thus making it much easier to determine blood flow rate.

Rich variety of measurement functions

Full range of basic measurements

Distance, circumference, area, volume, angle, and other basic measurements are all provided and easily acquired. Volume measurement can be obtained simply by using the area-length, ellipse, or biplane methods.



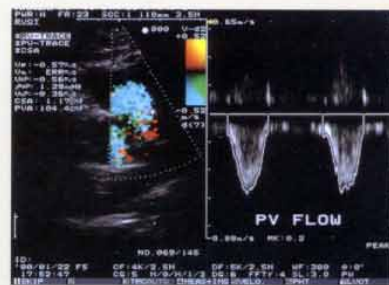
Urological measurements

Estimates hypertrophic volume and antigen concentration from the volume measurements of the bladder, prostate, and other urologically-related regions. Convenient urological measurement report and edit functions are also provided. Programmable to suit the user's specific requirements.



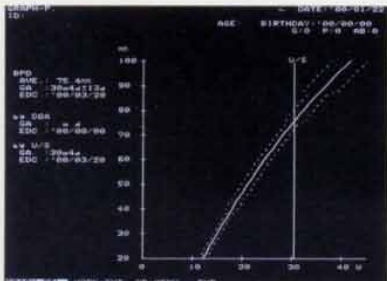
Auto-tracing

Just set the start and end points, and this function automatically traces the Doppler waveform's envelope. An essential function in view of the repetitive nature of Doppler examinations.



Obstetrics measurements

A sophisticated obstetrical report function displays requisite measurement data, fetal weight, fetal and maternal anatomical status, ratios, and clinical history. Standard growth curves and previous exam data are presented in graphics. And all of the information can be called up with a few simple key strokes. Tables and equations have been incorporated for easy set-up, and are programmable according to the user's specific needs.

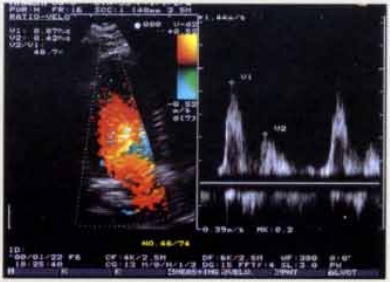


Obstetrics report table showing clinical history, measurements, and fetal status. The table includes columns for measurement type, unit, and value. The text "CLINICAL HISTORY" and "FETAL STATUS" are visible.

CLINICAL HISTORY	MEASUREMENTS	UNIT	VALUE
GA BY U/S	39w4d		
GA BY LMP	4		
GA BY M/D	39w4d		
EDD BY U/S	08/03/98		
EDD BY M/D	08/03/98		
HT	1.68	M	
WT	65	KG	
HT	1.68	M	
WT	65	KG	
HT	1.68	M	
WT	65	KG	

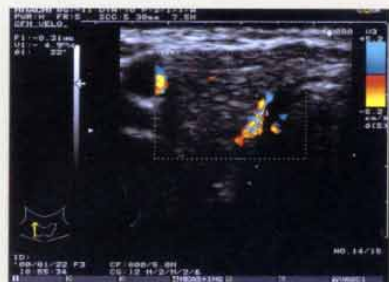
Cardiac measurements

Five types of cardiac measurements in M-Mode are available: mitral valve (MV), aortic valve (AO), left ventricle (LV), pulmonary valve (PV), and tricuspid valve (TV). The report function displays all of these measurements on a single page for easy review.



Color Doppler flow rate measurement

This innovative feature permits the flow rate (typically obtained from pulse Doppler waveforms) to be measured directly from a color Doppler image. Simply setting the caliper in the colored area and the angle bar in the flow direction provides prompt measurement and display of the average flow rate.



Patient reports

This feature obtains the mean value by recording repeated measurements, thus minimizing the chance of measurement errors. Measurement data is assembled in the form of a patient report, which can be reviewed on-screen or output as hard copy.

Patient report table showing measurement data for LV and RV. The table includes columns for measurement type, unit, and value. The text "LV REPORT" and "RV REPORT" are visible.

LV REPORT	RV REPORT
LV END-DIASTOLE DIAMETER	42 mm
LV END-SYSTOLE DIAMETER	32 mm
LV PH ENDO-DIASTOLE THICKNESS	12 mm
LV PH ENDO-SYSTOLE THICKNESS	12 mm
RV ENDO-DIASTOLE THICKNESS	12 mm
RV ENDO-SYSTOLE THICKNESS	12 mm
RV ENDO-DIASTOLE VOLUME	111 ml
RV ENDO-SYSTOLE VOLUME	66 ml
STROKE VOLUME	45 ml
STROKE INDEX	4.8 ml/m ²
SHORING DISTY	4.8 ml/m ²
EJECTION FRACTION	40.5%
FRACTIONAL SHORTENING	30.7%

Hip-joint dislocation angle measurement

A highly useful function for measuring the angle of hip-joint dislocation in a newborn infant. The degree of severity is determined by the angles of bony roof and cartilage roof. Just input the joints to be measured and the function automatically calculates the angles "α" and "β".

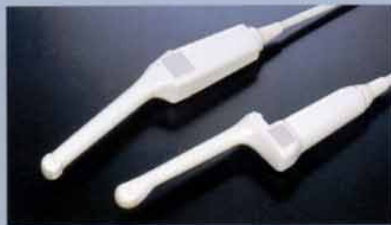
Full selection of high density probes

Whether a routine exam or a highly specialized one, you'll find the optimal probe in the EUP series



High sensitivity probes

The 3.5 and 5.0 MHz convex probes (10-76 mm R) are specially designed for high-sensitivity blood flow measurement, and produce sharp, clear images. Excellent for detecting low-velocity blood flow, even in tumors.



Transvaginal probes

Ultrasound scans have become an increasingly vital tool in obstetric applications -- early diagnosis of pregnancy, placenta previa, ovarian progress in infertility cases, and so on. In short, a wide variety of transvaginal probes is needed. The EUP series offers just that. There's the standard EUP-V33 for biopsies and ovum collection; the EUP-F331 for palpation-type procedures; the EUP-CC331, which provides simultaneous display of both axial and transaxial images, and the EUP-V33W, which provides a 200° viewing angle.



Transrectal probes

A wide selection is available to meet the specific application. The EUP-CC331 provides real-time biplane imaging; the EUP-U322, when combined with linear or convex probes, permits observation of positional relations, and the 7.5 MHz EUP-U33 is useful for obtaining sharp images of the rectal wall, etc.



Wide-view, high-frequency probe

A high-frequency linear probe with an attached water bag designed for examinations of the mammary gland, thyroid, or wide body surface regions. Water volume can be readily adjusted by syringe for optimal imaging.



7.5 and 10 MHz probes for superficial regions

For clear depiction of superficial blood vessels, the EUP series offers a full range of 7.5 and 10 MHz high-frequency probes, including compact linear probes and Hitachi's unique fingertip probes. A great way to expand color Doppler applications as well.



Biopsy probes

Dedicated biopsy probes are provided in two types -- convex and linear. The convex probe is best suited for biopsies of the subdiaphragm, pancreatic cysts, and the like, while the linear probe is best suited for regions such as the kidneys. For superficial regions, an oblique stand-off attachment with a biopsy aperture is available for use with a 7.5 MHz linear probe. Biopsy attachments are also available for use with general-purpose convex probes.



Intraoperative probes

The EUP series also offers a selection of probes for use during surgical procedures. The 5 MHz T-shaped linear probe is designed for viewing the gallbladder and liver; the 7.5 MHz J-shaped probe for hepatic liver procedures, and the 7.5 MHz 40R laparoscopic probe for minimizing surgical trauma.



Probe for use with endoscope

The 10R convex probe can be docked with an endoscope to provide a wide viewing angle. The face of the probe and forceps movement can be monitored via the endoscope, enabling more precise scanning and manipulation. Ideal for imaging the gastric wall, pancreatic cauda, or other regions that are difficult to scan through the abdomen.

Composition of main unit:

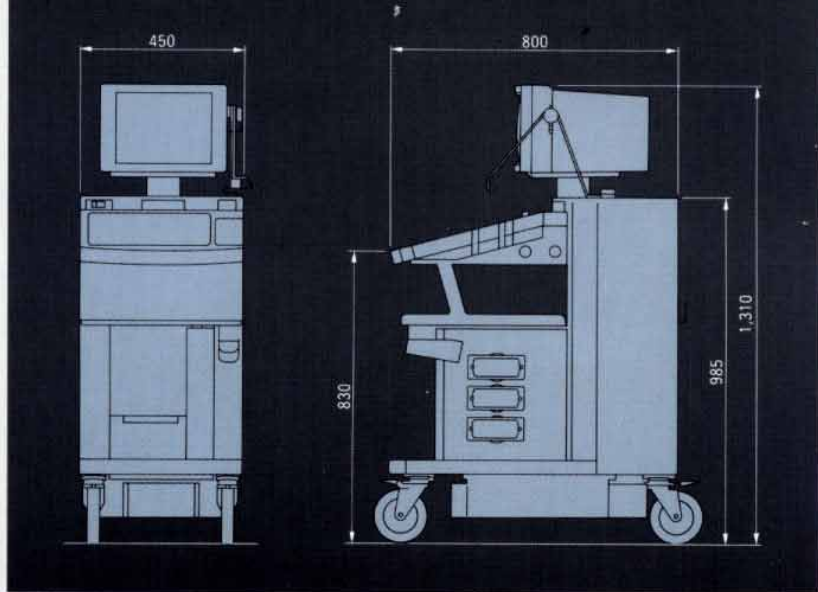
EUB-525 main unit

Accessories

(acoustic-coupling jelly, dust cover, power cord, and allen wrench)

Ultrasound Scanner EUB-525

Physical dimensions 1/20 (mm)



Specifications

Scan method	: Convex and linear electronic scanning
Display mode	
B mode	: B mode (two-image display available), B/M mode
M mode	: M mode
D mode	: D mode, B/M/D mode, M/D mode, B/D mode (FFT analysis display)
CFM mode	: CFM-B mode (dual display available), CFM-B/B mode, CFM-B/CFM-M mode, CFM-M mode, CFM-B/D mode, CFM-B/CFM-M/D mode, CFM-M/D mode
B mode	
Scan angle	: 90°, 60°, 45°, 30°, and 15° (EUP-C314T)
Display depth	: Max 24cm (at 3.5MHz)
Frame rate	: 140 frames/sec (at 15° display in fast mode with EUP-C 314T) (When display depth is 17cm) 18 frames/sec (at 60° display in detail mode with EUP-C 314T)
Display size	: 3.5MHz.....5-24cm in 8 steps 5.0MHz.....4-21cm in 8 steps 6.5MHz/7.5MHz....3-17cm in 8 steps 10MHz.....2-8.5cm in 6 steps
Orientation	: Top-bottom and right-left inversible, 90° rotation Forward/reverse inversible in D-mode
Memory recording and playback (EJU-MM7) :	
Cine-memory mode :	
	Max.314 frames (at 14° display with EUP-C311T)
	Standard : 73 frames (at 65° display with EUP-C311T)
	Continuous playback, frame forward and reverse, variable speed playback, automatic detection/recording/playback of heart beat
	B, M or D mode image recording selectable in B/M, B/D mode
	Multi-memory mode : 16 images
Pan zoom	Possible after frozen image
Vertical shift of B mode image	
Positive/negative reversal :	B mode and M/D mode image reversible independently
D mode	
CW Doppler	: Reference frequency : 2.5 MHz Maximum detection flow speed : ±7.5m/s
PW Doppler	: Reference frequency : 2.5, 3.5-5.0, 7.5MHz Probe frequency : 3.5, 5.0, 6.5, 7.5, 10MHz Repetition frequency : 1-20KHz Maximum detection flow speed : ±3.0m/s
Wall filter	: PW: 50-1600Hz, 12 kinds, CW: 400-1600 Hz, 7 kinds
Baseline shift	: Possible
Memory recording/playback (EJU-MM7) :	40 sec. (at sweep rate of 2.5sec.)

M mode

Display method	: Scrolling
Sweep rate	: 1.25, 2.5, 5 and 10 sec.
Shift of field of view	: Possible after zoomed display

CFM mode

B mode (with color box function of EUP-C314T)	
View angle	: 15°-90° continuously variable (with color box function of EUP-C314T)
Steering	: Possible
Display depth	: Max. 24cm

M mode

Display method	: Scrolling
Sweep rate	: Selectable in 4 steps

Color display method

- (1) Velocity-velocity variance display
Velocity is displayed in red and blue brightness and velocity variance in green additionally.
- (2) Reflection power intensity display
Direction is displayed in red and blue color and reflection power intensity in brightness.
- (3) Velocity display
Direction and velocity is displayed in red and blue like color.
- (4) Velocity variance display
Extent of velocity variance is displayed with difference levels of yellow brightness.
- (5) Color Flow Angiography (CFA) display
Reflection power is displayed with different levels of brightness. CFA mode has no velocity information.

Monitor

: 12"

Bio signal

: 2channels (max.), ECG.

Probe switching

: Electronic linear/convex type : 2probes, or 3 probes

CW Doppler single-element type : 1 probe

Ultrasound output level

: Selectable in 3 steps

Power requirements

: 120V AC or 230V AC±10%, 50/60Hz

1.2kVA (maximum)

Weight

: Approx.130kg (standard composition)