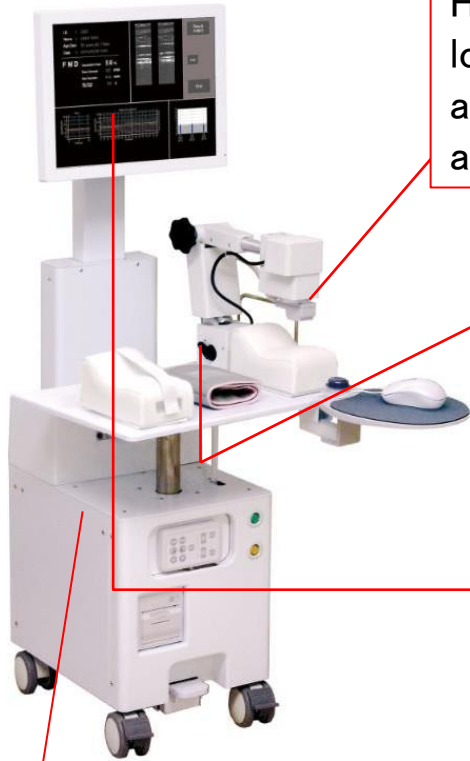




Main unique features of UNEXEF

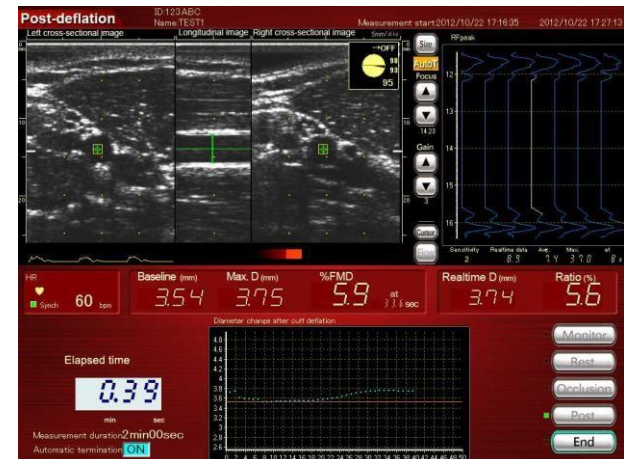
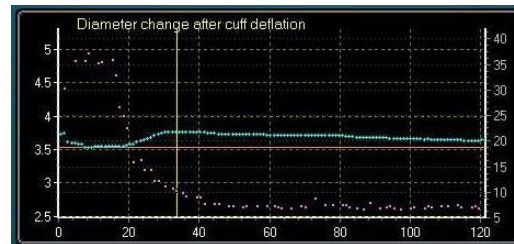


H-shaped probe captures the location of blood vessel easily, and tracks the movements automatically.

Hybrid (robotic) arm keeps the probe at the precise measurement location.

The diameter and flow rate are measured spontaneously, and the trend drawing leads to the correct FMD Value.

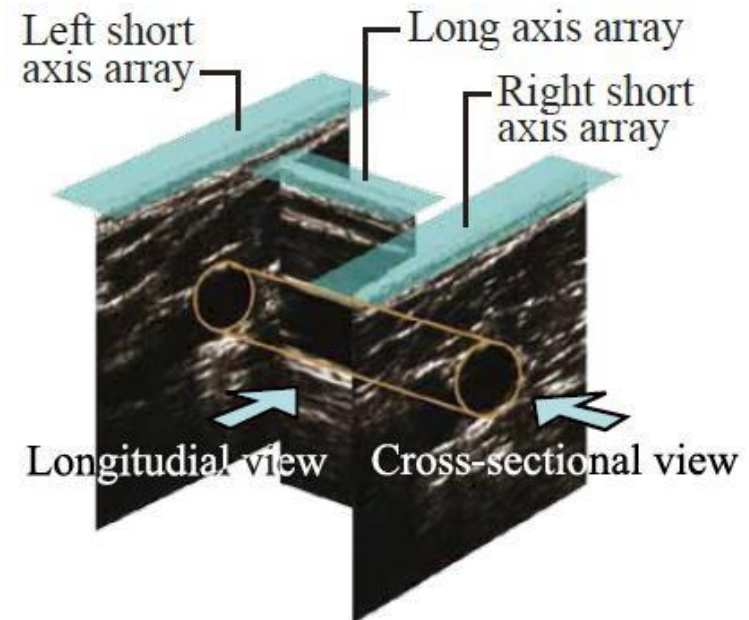
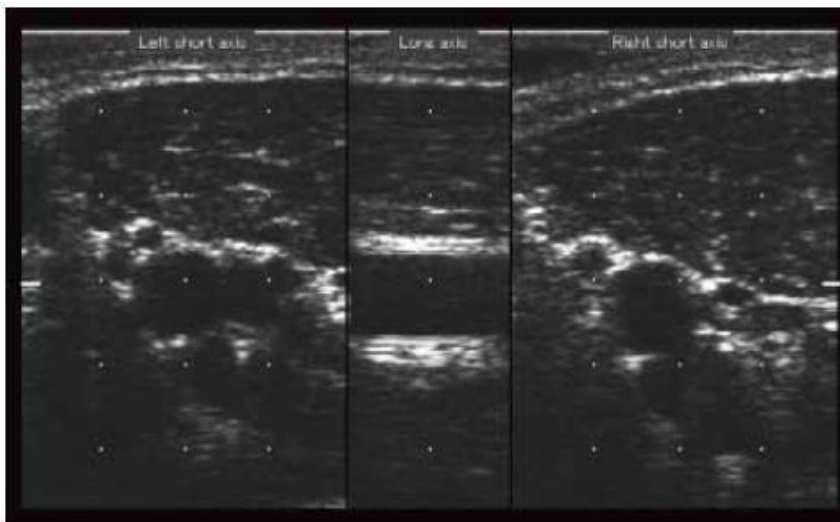
All necessary equipment is included



Features of UNEX EF - #1

H-SHAPED PROBE CAPTURES ONE LONG- AND TWO SHORT-AXIS IMAGES SIMULTANEOUSLY.

Three images provide information on the relative positioning between the probe and the artery - the use of three images allows for the automated correction of the probe position via the hybrid/robotic arm.



Features of UNEX EF - #2

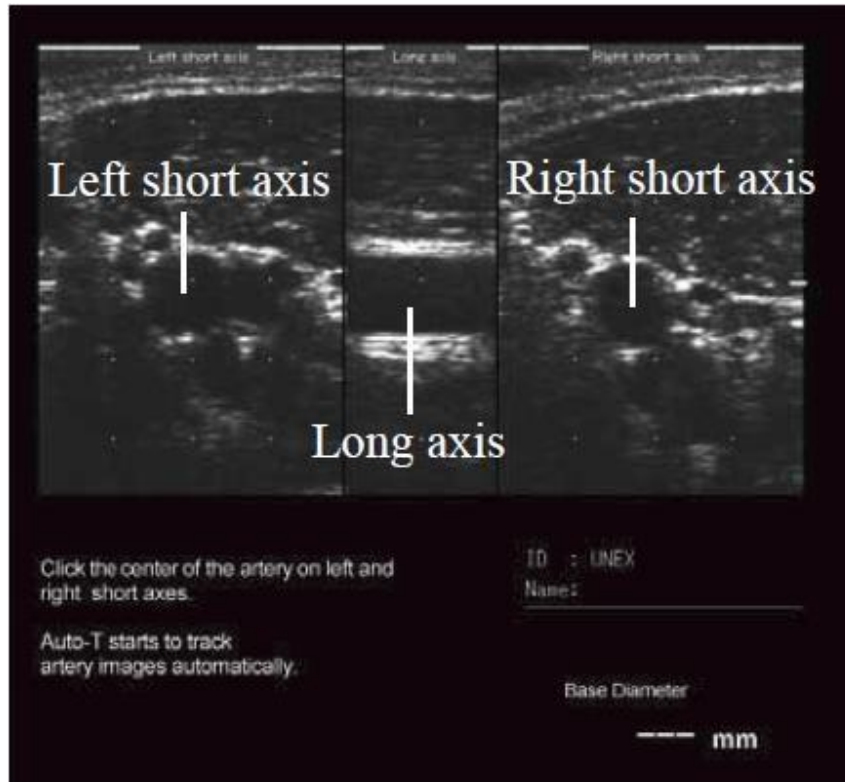
**HYBRID-ARM IS A PROBE-HOLDING UNIT
EQUIPPED WITH AN AUTOMATED TRACKING
SYSTEM.**



Traditional ultrasound assessment for FMD requires a significant learning curve to establish high quality and accuracy in the method. The Hybrid-arm solves the technical skill issue by its software operated functions; alignment and tracking of the images.

Features of UNEX EF - #3

THE ALIGNMENT TO THE BLOOD VESSEL IMAGE IS AUTOMATED.

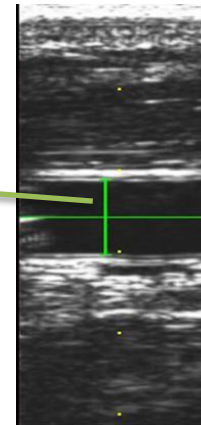
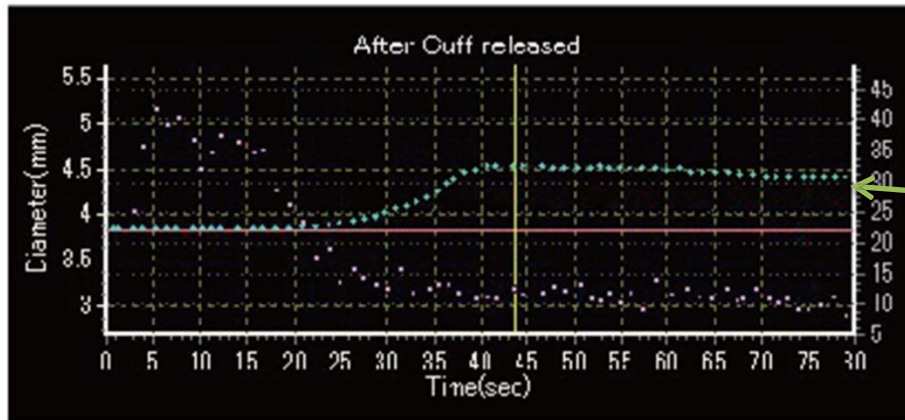


The tracking system with the software operated functions allows artery images to be steady. It starts tracking and measuring the arterial diameter almost automatically.

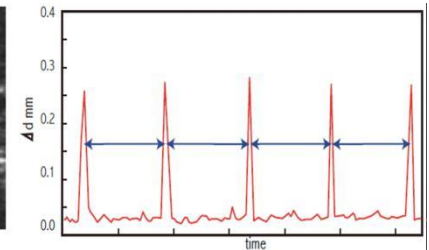
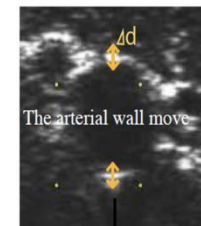
Features of UNEX EF - #4

ECG R-WAVE TRIGGER IS AVAILABLE FOR END-DIASTOLIC MEASUREMENTS OF EACH PULSE.

The brachial artery diameter is measured from the image at the end-diastolic phase determined by ECG R-WAVE. Movements of the arterial wall are detected from the images.



Averaging 21 lines within 3 mm width ROI



The arterial wall movements are detected from the images.

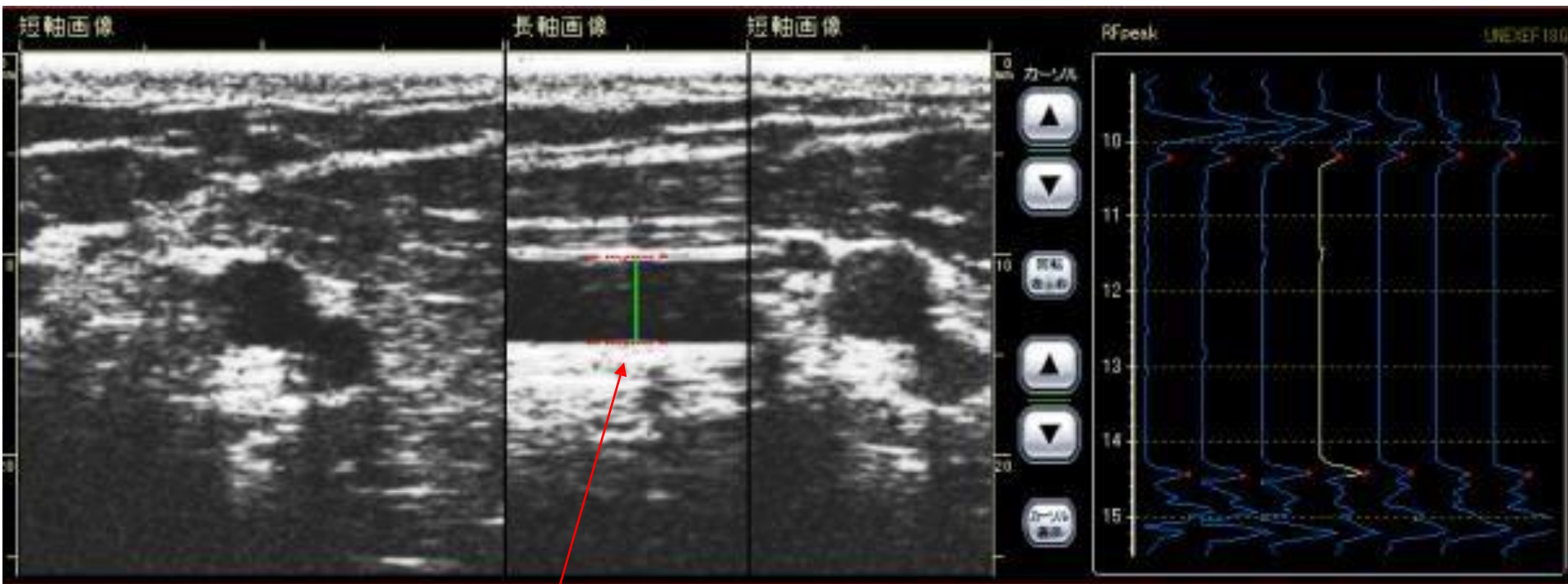
Features of UNEX EF - #5

MEASUREMENT OF VESSEL DIAMETER BY USING A-MODE

Perpendicular image

Longitudinal image

A-Mode



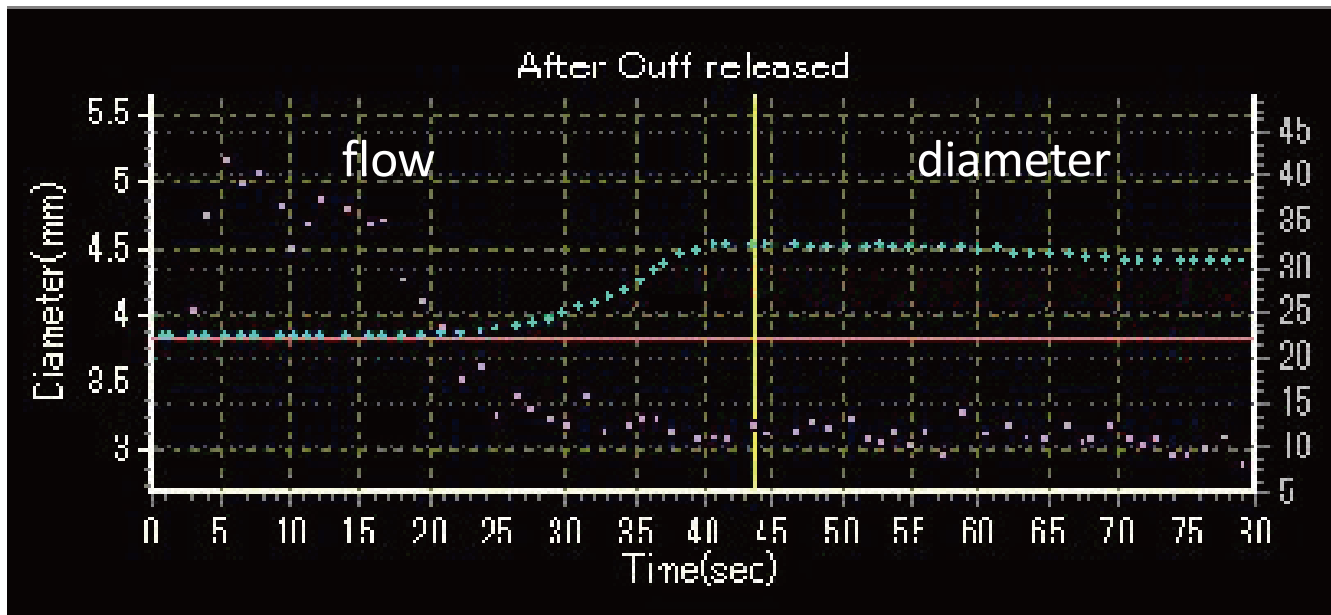
Edge detection by B-mode signals

Averaging within 3 mm width for diameter measurement

Features of UNEX EF - #6

TRUE MAXIMUM DIAMETER IS DETECTED TO CALCULATE FMD.

The true maximum arterial diameter is detected through the trend-graph that shows the diameter change measured per beat post occlusion phase.



Flow Chart of simplified FMD measurement

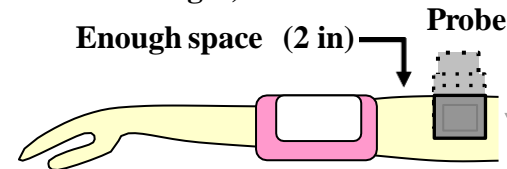
1. Wrap the cuff on the forearm.

The tube comes out toward the peripheral.
(Wear a supporter under the cuff if necessary).

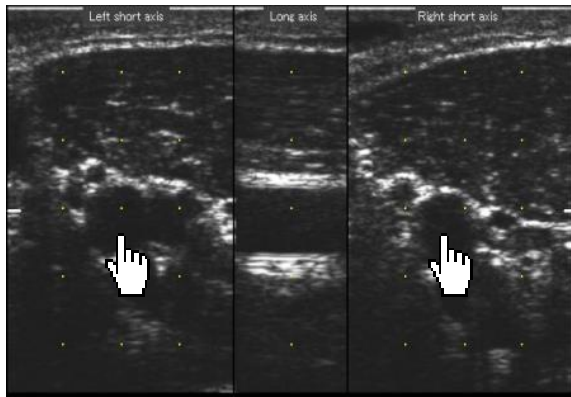



2. Set the probe on the upper arm.

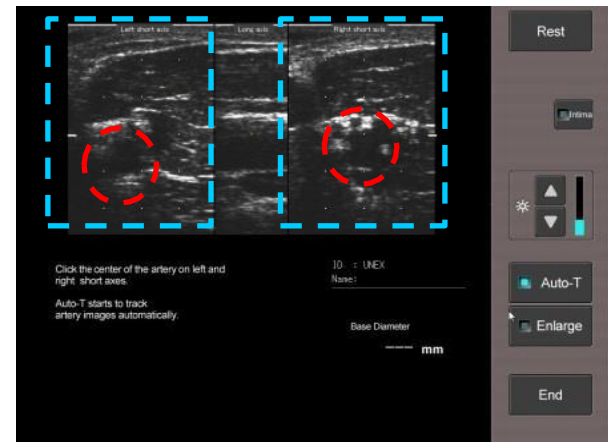
Slowly slide the probe a bit to the front.
(The images of the artery on the short axes move to the right).



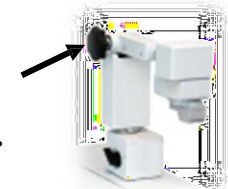
3. Tap the center of the artery on the two short axis images.



Auto-T starts to track artery images automatically.
Tap the centers again if the green markers  go off the center.

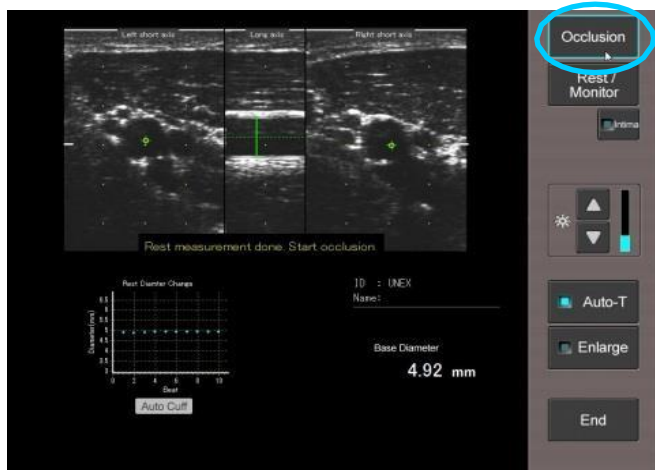


Fix the nob when the artery showed up on the short axes images .



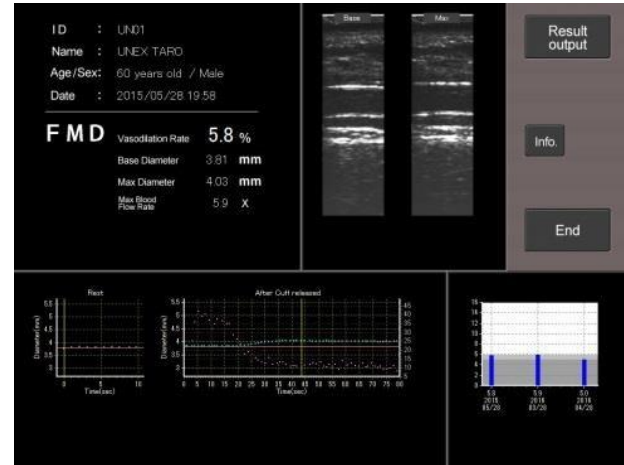
4. Tap the [Occlusion] button.

Tap [Occlusion] to start to inflate the cuff. 5 mins countdown for occlusion starts.

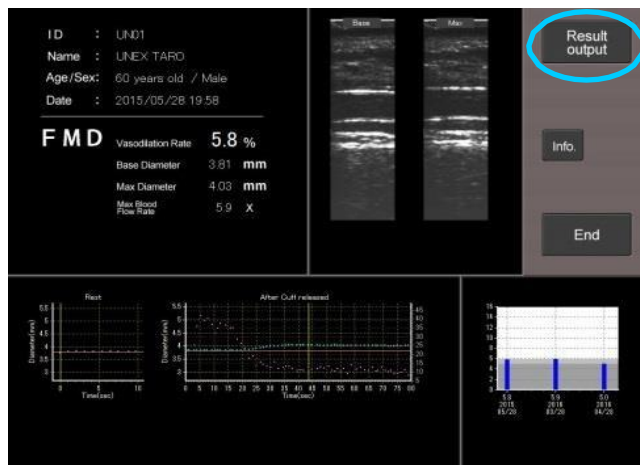


5. Wait for the announcement of the end.

A result shows up after the end of FMD measurement.



6. A result is printed right after.



A result is printable by tapping [Result output] right after FMD test.
Tap {End} to start another FMD test.

UNEX EF Ultrasound System



Specifications

ULTRASONIC DIAGNOSTIC EQUIPMENT

Mode	: B-mode, A-mode, Color Flow mode
Scanning method	: Electric linear scan
Focus method	: Digital beam forming
Adjustment	: B-mode gain, Beam focus
Display	: 15 inch color LCD
Operation	: Touch Screen or Mouse
Data Storage	: Internal flash disk
US Transducer	: Electric linear array transducer
Transducer Frequency	: 10MHz
Power supply	: AC 100-240V, 50/60Hz, 135VA
Protection	: Class I, type BF
Ope. Temperature	: 10 to 40 degree C
Ope. Humidity	: 20 to 85% (no condensation)

Configuration

Dimensions	: 480(W)x1200(H)x520(D) mm
Weight (approx. weight)	: 35Kg