

HITACHI
Inspire the Next



3D Breast Ultrasound in Seconds



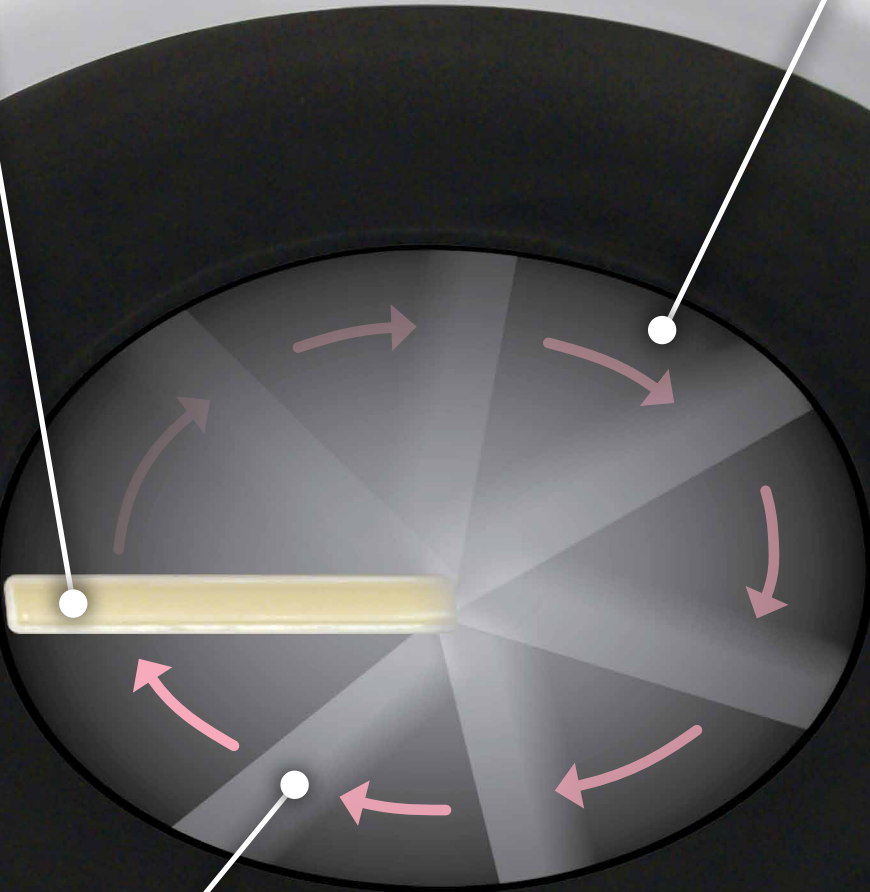
Ultrasound Solutions Clearly Defined™

92mm PROBE

Captures Entire Breast
in a Single Volume

ROTATING SCAN CONE

Acquires in the Radial Plane



30 SECOND
Acquisition Time



FULLY
AUTOMATED
Image Acquisition



SOFIA is designed as an adjunct to mammography for dense breast patients.

The SOFIA 3D Breast Ultrasound system uses a unique scanning approach to solve the economic and logistic challenges associated with whole breast ultrasound by obtaining a high-resolution volume of an entire breast in a matter of seconds.

The key to this speed is SOFIA's full-field radial scanning method and its extra-long linear ultrasound array which when combined, give SOFIA an effective field of view large enough to image most dense breasts in a single volume.

This speed not only enables greater operational efficiency than ever before but, when combined with the patient-focused design of SOFIA, delivers the type of comfortable and private exam experience that is key to patient acceptance.

IMAGE
ACQUISITION





QUICK, COMFORTABLE, AND PRIVATE 3D BREAST ULTRASOUND

By entirely re-imagining how breast ultrasound is performed, SOFIA is able to perform bilateral breast ultrasound scans in an exam that rivals any modality in the breast imaging suite in terms of speed and comfort. The key is SOFIA's unique scanning cone, which is recessed into its comfortable scan bed and houses Hitachi's extra-long linear probe. The patient lies in the prone position placing her breast with the nipple in the center. In just a single 30-second radial sweep, a 3D volume dataset is collected of the entire breast.

RAPID ACQUISITION

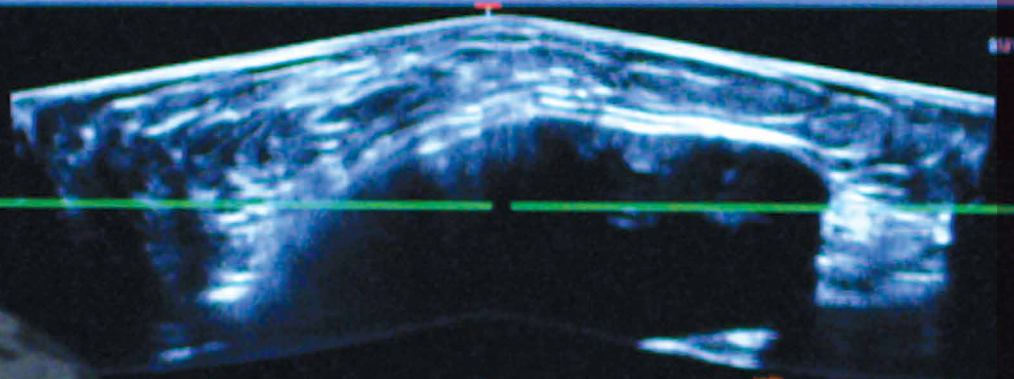
- 30-second scan time per breast allows the scheduling of patients as often as every ten minutes
- Automated and reproducible
- Requires only a thin layer of ultrasound lotion—no additional disposables required
- Intuitive touch-screen interface automates the scanning process

UNPARALLELED COMFORT

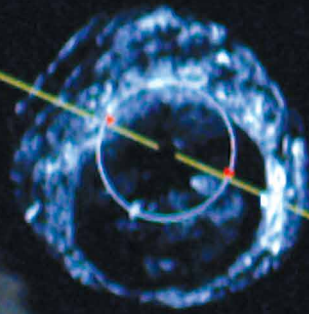
- Patient can remain covered during the entire exam
- Requires no external compression other than the patient's own body weight
- Comfortable memory-foam bed drops to 25 inches from the floor for easy access



IMAGE
REVIEW



0121 Saturday, A

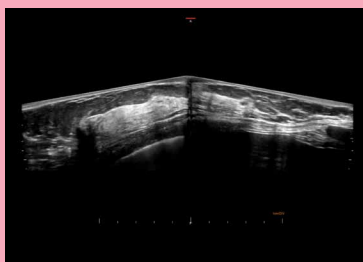


0891 Saturday, A



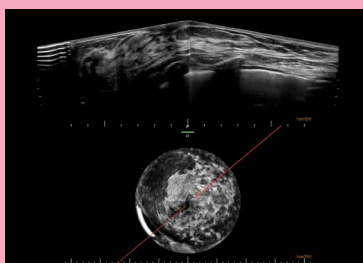
Subviewer

STREAMLINED IMAGE INTERPRETATION



Full-field axial view showing a spiculated shadowing mass that was determined to be invasive ductal carcinoma upon biopsy.

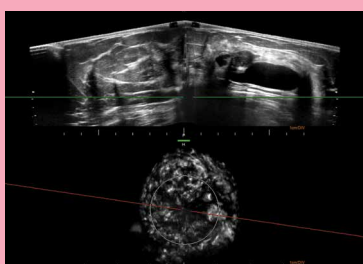
The efficiency and speed that characterize SOFIA during scanning continue in interpretation. Because each breast is presented to the radiologist as a single, high-resolution DICOM-compatible dataset and interpreted in familiar planes, review times are greatly shortened.



Radial image (top) of a left breast clearly depicting a lobule and its ducts extending away from the nipple. The coronal view (bottom) was used to identify the precise location of the radial slice.

INTUITIVE PRESENTATION

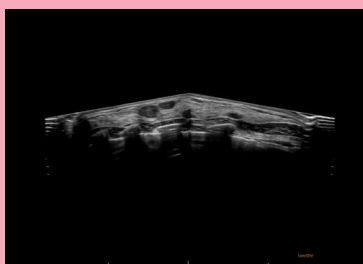
- Full-field radial views enable average interpretation times of approximately one minute per breast
- Viewing each breast in a single volume allows easy understanding of the relationship between the nipple, breast anatomy, and any suspicious region of interest
- Images are both acquired and viewed in the radial plane to maximize resolution



Radial full-field image of a left breast with multiple large cysts. This image, taken from approximately the 9:00 to 3:00 positions of the breast, shows a large cyst with a solid mass immediately anterior to it.

COMPREHENSIVE 3D TOOLS

- Multi-planar reconstruction allows the simultaneous visualization of any mass or structure from multiple planes
- Volume rendering allows intuitive visualization of any ROI and its relationship to other structures
- Oblique-View Tool puts a “virtual transducer” in the hands of the radiologist



Full-field axial view of a breast with multiple cysts and benign fibroadenomas. The signal drop-off on both sides of the image represent the lateral margin and the sternum.

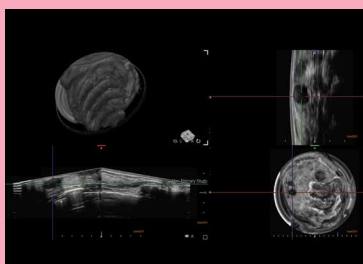


Image of a fibroadenoma viewed in three planes simultaneously. The volume rendering of the breast (top-left) has been rotated with the patient's ribs facing the viewer.



Ultrasound Solutions Clearly Defined™

A Shared Service Solution

**THE FLEXIBILITY TO EFFICIENTLY IMPLEMENT
WHOLE-BREAST ULTRASOUND**



Conventional wisdom says that implementing a whole-breast ultrasound program can be a costly and time-consuming proposition. SOFIA defies this by delivering a solution that provides the speed of automation without requiring a dedicated room. With its convertible scan table and the premium-class ARIETTA ultrasound system powering its imaging, the SOFIA room can be used for diagnostic breast scanning, biopsy or any other number of applications when not enlisted for whole-breast scanning.





Ultrasound Solutions Clearly Defined™

Hitachi Aloka Medical America, Inc.

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HIGH DENSITY TRANSDUCERS
with smart connectors™

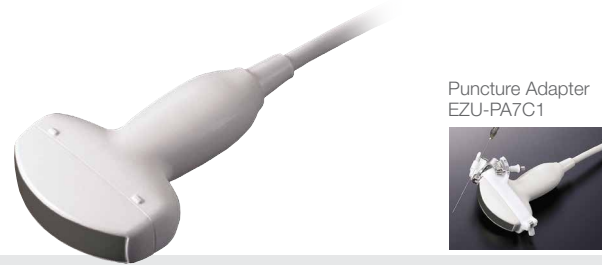
ARIETTA 70
NEXT GENERATION ULTRASOUND SYSTEM
For Radiology



Puncture Adapter
EZU-PA7C2



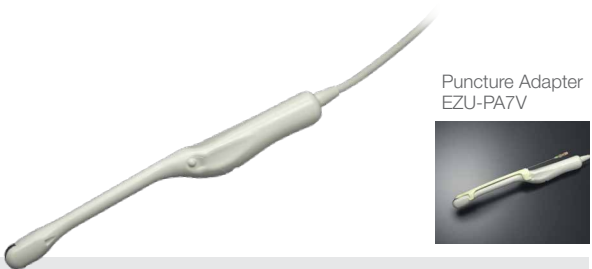
C22P Abdominal Imaging and Biopsy
6-1 MHz | 75° (20 mmR)



Puncture Adapter
EZU-PA7C1



C251 Abdominal Imaging and Biopsy
5-1 MHz | 75° (50 mmR)



Puncture Adapter
EZU-PA7V



C41V1 Endocavity
10-2 MHz | 200° (10 mmR)



Puncture Adapter
EZU-PA532



C42 Neonatal, Pediatric
8-4 MHz | 80° (20 mmR)



Puncture Adapter
EZU-PA7B1-(1-4)



C25P Abdominal Imaging and Biopsy
5-1 MHz | 75° (50 mmR)



Puncture Adapter
EZU-PA3C1



L34 Small Parts, Abdomen
7-3 MHz | 38 mm

HIGH DENSITY TRANSDUCERS with smart connectors™

ARIETTA 70

NEXT GENERATION ULTRASOUND SYSTEM
For Radiology



Puncture Adapter
EZU-PA7L2



L55 Breast, Small Parts, Thyroid
13-5 MHz | 50 mm



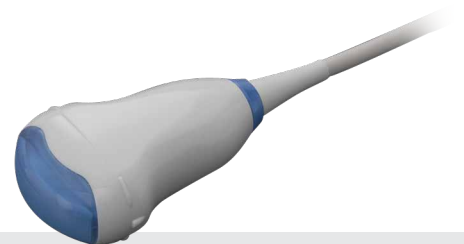
Puncture Adapter
EZU-PA7L3



L64 Breast, Small Parts, Thyroid
18-5 MHz | 38 mm



S12 Abdomen, Cardiology, Transcranial
5-1 MHz | 90°



VC34 3D/4D Abdomen, Obstetrics
7-2 MHz | 70° (40 mmR)



VC41V 3D/4D Endocavity
8-2 MHz | 140° (10 mmR)



VL54 3D/4D Small Parts, Breast
13-5 MHz | 38 mm



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MP1116-111



The Hitachi Aloka ARIETTA 70 powering SOFIA is a premium ultrasound system supporting multiple applications in addition to whole breast scanning.

Its advanced digital beam former and high-speed back-end enable high spatial resolution, high contrast resolution, and a wide dynamic range.

A full complement of linear, convex, and phased array transducers are available for ARIETTA 70 and, when combined with SOFIA's convertible table, deliver the ultimate in clinical flexibility.

ADDITIONAL APPLICATIONS

Radiology, Interventional Radiology, Obstetrics, Gynecology, Abdominal, Peripheral Vascular, Urology, Musculoskeletal, Pediatrics, Cardiology

POWER REQUIREMENTS

Input: 240/120 V @ 60 Hz

Power Consumption:

(Standard Components): 580 VA

(With Optional Recorders): 900 VA

ENVIRONMENT

Temperature: 10 - 40° C

Relative Humidity: 30 - 75%

(No Condensation)

Atmospheric Pressure: 700 ~1060 hPa

SYMPHONIC TECHNOLOGY

Arietta 70's Symphonic Technology optimizes data fidelity along the entire signal handling chain.

Multi-layered Crystal

Multiple crystal layers within each element, minimize signal attenuation.

Compound Pulse Wave Generator

Unique transmission technology reduces heat generation, allowing stronger pulses to improve SNR.

Pixel Focusing

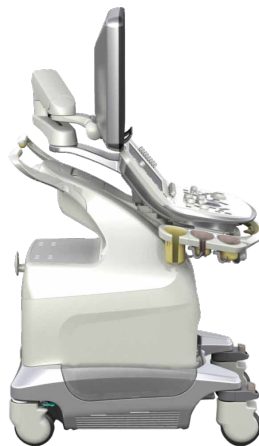
Dynamically focusing at the pixel level improves resolution and image uniformity.

Ultra Backend

High-speed digital computing fuels real-time image processing features.

IPS-Pro Display Monitor

Delivers wide half-contrast viewing angle and excellent contrast, black levels, and switching speed.



PHYSICAL DIMENSIONS

Weight: 258 lbs. (117 kg)

Dimensions: 21"(W) x 31"(D) x 51-69"(H)

Display: 21" IPS Pro

SUPPORTED DICOM OPTIONS

DICOM Store (Storage Commit)

DICOM Print

DICOM Query/Retrieve

DICOM Modality Worklist

STANDARD IMAGING FEATURES

HI Definition Tissue

Harmonic Imaging (HdTHI)

Extends penetration and increases resolution by transmitting a wide band pulse and receiving the second harmonic and sub-harmonic signals across the entire spectrum of the probe bandwidth.

HI Compound Imaging (HI Com)

Is especially beneficial for improving the visibility of luminal structures. HI Com transmits and receives ultrasound beams in various directions and superimposes the resultant images in real time.

Adaptive Imaging (HI REZ+)

Utilizes Hitachi Aloka's high speed digital processing engine to extract structures and emphasize tissues without reducing frame rate.

Fine Flow

Displays high-definition, high frame rate color Doppler images of fine vessels with minimal blooming.

92 MM LONG LINEAR ARRAY



The extra-long linear probe of the ARIETTA 70 is integrated into the SOFIA bed. Using trapezoid imaging extends the width of its field-of-view to more than 10 cm at depths greater than 5 cm. This large FOV enables SOFIA's short 30-second scan time.



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General Specifications



EXAMINATION TABLE

Length: 77" (195.58 cm)
Width: 32" (81.28 cm)
Height: 25"-37" (63.5-93.98 cm)
Weight: 450 lbs. (204 kg)
Max. Weight Rating: 300 lbs. (136 kg)

ELECTRICAL POWER – EXAMINATION ROOM

Voltage: 120 V AC
Max Amperage: 10 AMP
Frequency: 50/60 Hz
Continuous Power: Not Required
Max. Receptacle Distance: 72" (183 cm)

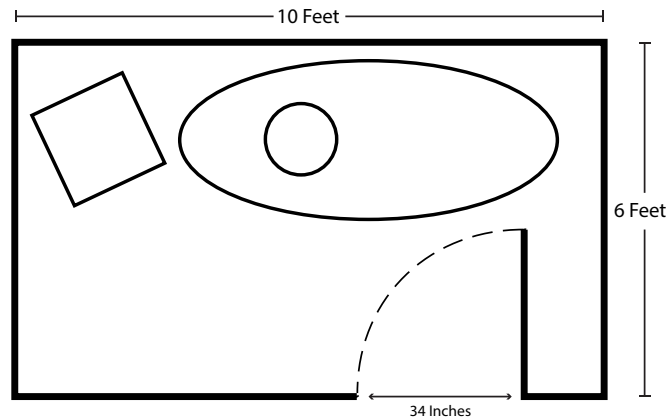
ELECTRICAL POWER – REVIEW WORKSTATION

Voltage: 100-230 V AC
Max Amperage: 5.3 AMP
Frequency: 50/60 Hz
Continuous Power: Not Required
Max. Receptacle Distance: 72" (183 cm)

COMPUTER NETWORK/ PACS/TELERAD

Computer Storage Space: 1GB
Max. Outlet Distance: 60" (153 cm)
Minimum Upload Speed: 3 MB/sec

MINIMUM ROOM DIMENSIONS



ADDITIONAL FACILITY REQUIREMENTS

Minimum Door Width: 34" (87 cm)
Non-ground floor installations require either a cargo elevator or lifting equipment capable of handling the overall size and weight of the examination table.

SCANNING METHODS

Automatic Image Acquisition
Manual Image Acquisition (Table Transducer)
Manual Image Acquisition (Manual Transducer)

REVIEW WORKSTATION

Processor: Intel i7
Memory: 8 GB
Hard Drive: 1 TB
Graphics Card: High Performance
Monitor: 2 Megapixel

