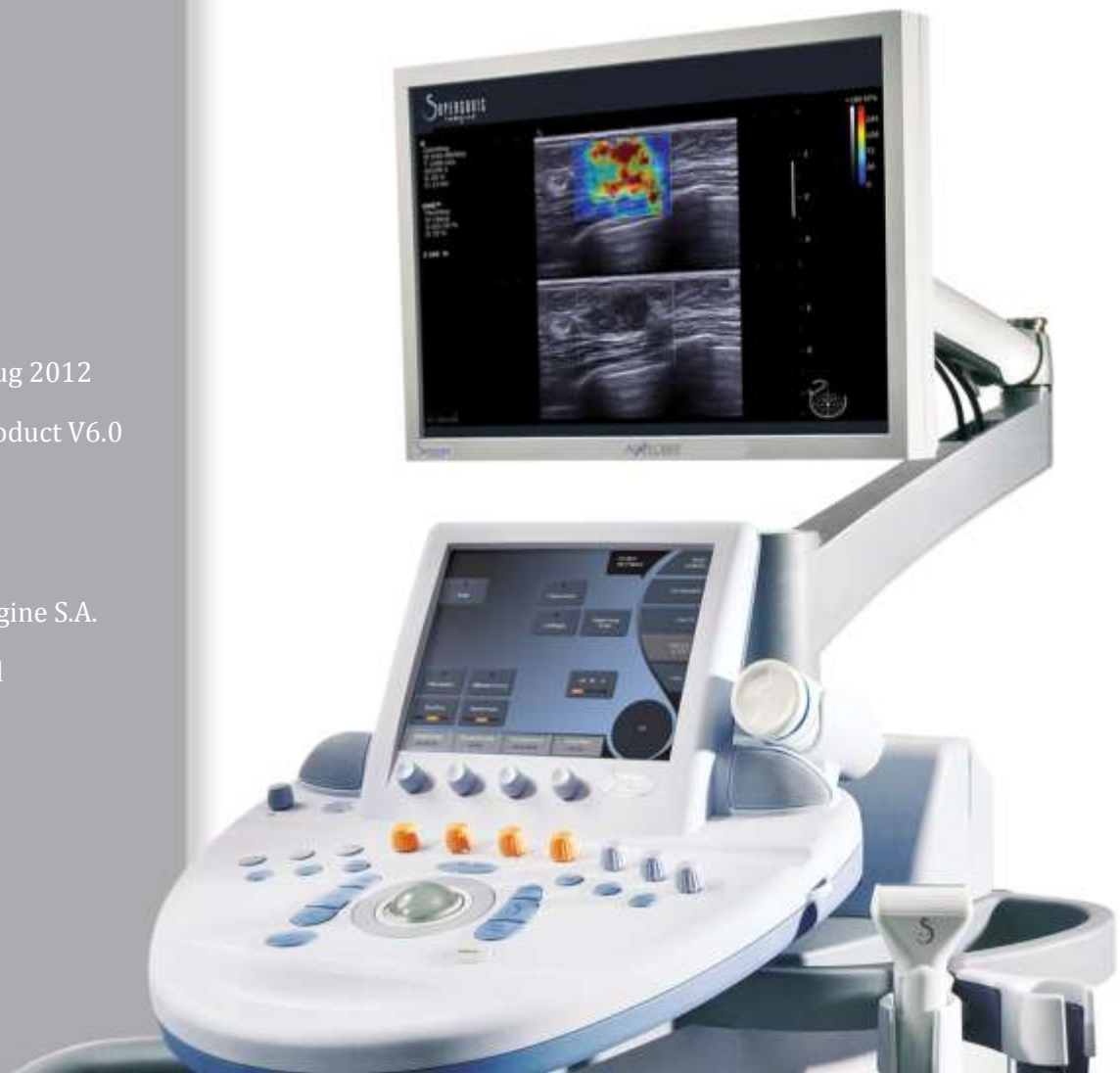
SUPERSONIC imagine

The Theragnostic Company™

AIXPLORER® MultiWave™

SYSTEM SPECIFICATIONS



Release Version: Aug 2012

Aixplorer 2012, Product V6.0

SSID02649-01

AIXPLORER® IS A NEXT-GENERATION ULTRASOUND SYSTEM FROM SUPERSONIC IMAGINE FEATURING MULTIWAVE IMAGING™ FOR IMPECCABLE IMAGE QUALITY, AND ULTRAFAST IMAGING WHICH ENABLES SHEARWAVE™ ELASTOGRAPHY AND ULTRAFAST DOPPLER

Overview

Clinical Applications

Abdominal
Renal
Pelvic
Breast (2D & 3D)
Thyroid
Genitourinary: Prostate, Scrotum
MSK
Vascular
General
Research

Imaging Modes

B-mode
Color Doppler: Color Flow, Color Power, Directional Color Power
Pulsed Wave Doppler
Contrast (CEUS)[1]
ShearWave™ Elastography
3D B-mode and 3D SWE

Imaging Features

Panoramic Imaging
Simultaneous Doppler
UltraFast™ Imaging
Tissue Harmonic Imaging
SuperCompound™
SuperRes™
TissueTuner™
Pulse Wave Velocity Tool[3]

Ergonomics

Interactive Touch Screen
Flat Panel Display
Height Adjustable
Mobile
Easy to Operate

Workflow

Auto Time-Gain Compensation Control
Retrospective and Prospective Capture
Cine Loop Trim Capability
Q-Box™ Elasticity Quantification Tools[2]
2D & 3D Volume Measurement Tools
Integrated BI-RADS® Lexicon
Thy-RADS™ Lexicon
On-cart Study Review with 3D Study
Continue Exam (Append)
Configurable ReportBuilder™
DICOM: Modality Worklist, Modality Performed Procedure Step, Store, Print, Query & Retrieve, Export
System Backup and Restore
High Definition Digital Video Output (DVI)

[1]*Contrast Imaging (CEUS) mode is not available in the United States.*

[2]*Quantitative elasticity scale and Q-Box™ tool are not available in the United States.*

[3]*Pulse Wave Velocity measurement tool is not available in the United States.*

Revolutionary Architecture & Performance

System Configuration

	Performance+3D Configuration
Motherboard	ASUS P6T7 Supercomputer
Processor	Intel® Xeon W3680
Core Speed	3.33 GHz
Number of Cores	6 cores (12 threads)
Graphics Board	NIVIDIA QUADRO 5000 with 2.5GB RAM
Memory	12 GB
Monitor	EIZO 20 inch, 16:10 ratio
Power Supply	Version 4 (min), Firmware 51
Hard Drives	320 GB x 2
3D Motor Controller	Integrated (optional)
Imaging Channels	256 x 256
Video Output	1680 x 1050 High Def DVI-D

Benchmarks

Cold Boot-up time: < 90 seconds
Shut down time: < 20 seconds
Transducer select time (typical): < 2 sec
Data access time: << 1 sec

Hardware

High performance hardware configuration to support 2D and 3D operation

Featuring:

- Intel processors
- Multi-thread processing
- 12 GB of RAM
- Large capacity Hard Drives

Software

64-bit Linux based Operating System

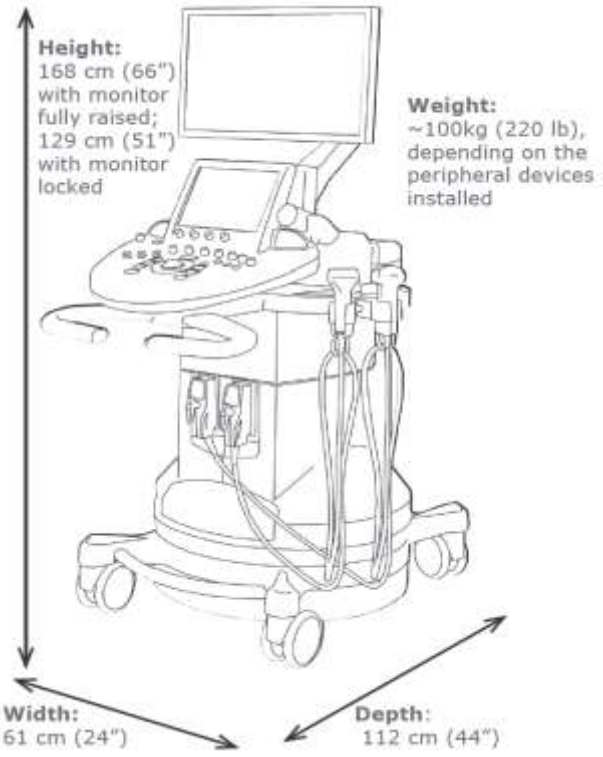
SonicSoftware™ Beamforming and Scan Conversion

UltraFast™ Imaging for Color Doppler and ShearWave™ Elastography:

- Up to 20000 frames per second acquisition

Data transfer rate: > 3 Gbytes/second

Physical System Specifications



Cart Design and Ergonomics

Thin, sleek body style
Able to pass through a 70 cm (28") doorway
Mobile design
Adjustable height handles for improved posture
and mobility
Four-wheel steering for excellent mobility
4 wheel braking with 2 swivel locks
Dual ergonomically accessible transducer ports
- 2 Active transducer connectors
- 2 Inactive transducer storage ports

Two removable and washable gel holders
On-cart storage area
Transducer connector holders with cable management
Transducer cable assist holder

Document Holder
- Integrated holder for iPod® or PDA
- Conveniently holds patient charts, records, etc.

Expansion bay for OEM devices
Built-in footrest
Programmable Footswitch

Control Panel

Adjustable control panel height for operator comfort standing or sitting
Vertical adjustment: 84 to 98 cm
± 45° swivel articulation
Adjustable control panel backlighting
Large simple controls for ease of operation
Easy-touch dual function knobs to access major modes
Center trackball with TouchRing™ for unparalleled ease of fine adjustment
Integrated 10 ¼" Touch Screen
Integrated wrist rest
Magnetic stylus holder
Integrated stereo speakers

Flat-Panel Display and Articulated Arm

20.1” (51 cm) EIZO FlexScan LCD Flat Panel Display
Low-glare hard coating; flicker-free to reduce eye-strain
Ultra-wide viewing angle: ± 178°
Pixel-sharp high resolution: 1680x1050
Dot Pitch 0.258 mm x 0.258 mm
Display Colors 16.77 million colors
Contrast Ratio: 900:1
Brightness: 300 cd/m2
Response time: 8 ms
Monitor is mounted on a fully articulated arm
Tilt, pitch and height adjustable
Overall height adjustment from 129 cm (51”) to
168 cm (66”)
Arm and monitor fold down to reduce overall height
to 129 cm (51”) for transport

Advanced User Interface Features

Interactive 10 ¼” Touch Screen
- Resolution: 1024 x 768
- Operates by touch, even with gloves
- Stylus friendly non-scratch coating
- Touch-sensitive on-screen keyboard
- Support for 7 language keyboard types

Time-Gain Compensation Controls
- Touch-sensitive ManualTouch™ TGC controls
- Up to 9 levels of TGC control in depth dimension
- One push Auto TGC control

Fingertip controlled Measurement Calipers
- Images can be displayed on the Touch screen to perform basic measurements such as distance and trace

Interactive Body Markers
- Transducer orientation can be selected with two taps of the fingertip
- Easily change orientation with rotational knob control

TouchRing™ trackball surround
- Rotate panoramic images
- Scroll lists
- 3D navigation

S - Key programmable key control
- User-programmable control allows the most commonly used functions to be accessed directly on the control panel

Transducers

SL15-4 50 mm Super Linear Array

- 256 composite elements
- Effective bandwidth: 4 MHz to 15 MHz
- Transducer footprint : 51 mm
- Ultra-lightweight: 116 grams
- Comfort-hold handle
- 2.1 meter cable
- Pinless connector for one-handed connect
- Biopsy guide available

SL10-2 38 mm Super Linear Array

- 192 composite elements
- Effective bandwidth: 2 MHz to 10 MHz
- Transducer footprint : 38 mm
- Ultra-lightweight: 80 grams
- Comfort-hold handle
- 2.1 meter cable
- Pinless connector for one-handed connect

SLV16-5 38mm Super Linear Volumetric

- 192 composite elements
- Effective bandwidth: 5 MHz to 16 MHz
- Transducer acoustic footprint: 38 mm x 43 mm (@ 30 degrees)
- 3D Field of View Options: Medium (~10°), Large (~20°), X-Large (~30°)
- Lightweight: 310 grams
- 2.1 meter cable
- Pinless connector for one-handed connect

SC6-1 64 mm Super Curved Array

- 192 composite elements
- Effective bandwidth: 1 MHz to 6 MHz
- Transducer footprint : 64 mm
- Field of View: 60°
- Ultra-lightweight: 122 grams
- Ergonomic handle
- 2.1 meter cable
- Pinless connector for one-handed-connect
- Biopsy guide available

SMC12-3 138° Super Micro-Convex

- 192 composite elements
- Effective bandwidth: 3 MHz to 12 MHz
- Transducer footprint: 28 mm
- Field of View: 138°
- Ultra-lightweight: 51 grams
- Comfort-hold handle
- 2.1 meter cable
- Pinless connector for one-handed connect

SE12-3 138° Super Endocavity

- 192 composite elements
- Effective bandwidth: 3 MHz to 12 MHz
- Transducer footprint: 28 mm
- Field of View: 138°
- Ultra-lightweight: 220 grams
- Comfort-hold handle
- 2.1 meter cable
- Pinless connector for one-handed connect
- Biopsy guide available

Clinical Applications Packages and User Presets

Fully optimized for Breast (2D and 3D), Thyroid, Abdominal, Renal, Pelvic, Genitourinary (Prostate & Scrotum), MSK and Vascular Imaging Applications

Rapid probe selection from touch screen

Clinically Optimized Presets:

- Breast
- Superficial Breast
- Deep Breast
- Breast Survey
- Thyroid
- Superficial Thyroid
- Abdomen
- Liver
- Difficult Abdomen
- Intestine
- Renal
- Pelvis
- Gyn
- Scrotum
- Prostate
- MSK
- Superficial MSK
- Vascular
    - Carotid
    - Upper Arterial and Venous
    - Lower Arterial and Venous
    - Abdominal Vascular
- General
- Phantom

User Customizable Presets

Up to 12 user-customized presets can be created per clinical application

New Presets can be created based on any existing factory optimized preset

"New", "Update" or "Manage" Presets options are available on the Probe selection screen

New User Presets can be associated with any Clinical Application, Annotation, Body Marker and Labeled Measurement set

Custom Presets are Color Coded for enhanced visibility and management

Imaging Modes and Processing Options

Total Dynamic Range (across all modes): 200 dB

Total Processing Channels: 65000
- Transmit channels: 256
- Receive channels: 128

B-mode Imaging:

Broadband frequency transmit and receive on all transducers

SL15-4 frequency range:
- Fundamental Imaging: 7.5 - 15 MHz
- Harmonic Imaging:
  - Transmit 4.5 - 5.625 MHz
  - Receive 9 - 11.25 MHz

Overall Bandwidth: 90% of transmit frequency
Axial Resolution @ -6 dB: 0.3 mm
Lateral Resolution @ -6 dB: 0.3 mm

SC6-1 frequency range:
- Fundamental Imaging: 2.5 - 5 MHz
- Harmonic Imaging:
  - Transmit 1.0 - 3.0 MHz
  - Receive 2.0 – 6.0 MHz

Overall Bandwidth: 90% of transmit frequency
Axial Resolution @ -6 dB: 1.1 mm
Lateral Resolution @ -6 dB: 1.2 mm

SE12-3 frequency range:
- Fundamental Imaging: 4.5 - 9 MHz
- Harmonic Imaging:
  - Transmit 3 – 4.5 MHz
  - Receive 6 - 9 MHz

Overall Bandwidth: 90% of transmit frequency
Axial Resolution @ -6 dB: 0.3 mm
Lateral Resolution @ -6 dB: 0.3 mm

SL10-2 frequency range:
- Fundamental Imaging: 2 - 10 MHz
- Harmonic Imaging:
  - Transmit 3.75 - 4.5 MHz
  - Receive 7.5 - 9 MHz

Overall Bandwidth: 90% of transmit frequency
Axial Resolution @ -6 dB: 0.3 mm
Lateral Resolution @ -6 dB: 0.5 mm

SLV16-5 frequency range:
- Fundamental Imaging: 5 - 16MHz
- Harmonic Imaging:
  - Transmit 4.5 - 5.625 MHz
  - Receive 9 - 11.25 MHz

Overall Bandwidth: 90% of transmit frequency
Axial Resolution @ -6 dB: 0.3 mm
Lateral Resolution @ -6 dB: 0.3 mm

SMC12-3 frequency range:
- Fundamental Imaging: 3.75 - 9 MHz
- Harmonic Imaging:
  - Transmit 3.75 – 4 MHz
  - Receive 7.5 MHz

Overall Bandwidth: 90% of transmit frequency
Axial Resolution @ -6 dB: 0.3 mm
Lateral Resolution @ -6 dB: 0.7 mm

Basic Imaging Optimization controls:
- Fundamental Imaging
- Tissue Harmonic Imaging
- High Definition / General / Frame Rate optimization control
- Penetration / General / Resolution optimization control
- Trapezoidal Imaging (where applicable)
- Sector Size Control (where applicable)
  - Large, Medium, Small

Advanced Imaging Optimization controls:
- SuperCompound™ Image enhancement
  - Up to 9 beam-steered lines of sight
- SuperRes™ Image enhancement
  - 4 levels of adaptive filtering
- TissueTuner™ Speed of Sound Correction
  - 5 different speeds to adapt to tissue type

Frame Rate (typical):
- SL15-4 > 40 Hz
- SC6-1 > 20 Hz

- SE12-3 > 35 Hz
- SL10-2 > 45 Hz
- SLV16-5 > 40 Hz
- SMC12-3 > 35 Hz

Dynamic Range: 40-80 dB in 1 dB steps
B-mode Gain: 0 – 100% of Dynamic Range
Gain Adjustable in Frozen Review
Line Density (max): 10 lines/mm
Persistence: 4 levels

Display Depth (preset dependent):
- SL15-4: 8 cm
- SC6-1: 30 cm
- SL10-2: 8 or 12 cm
- SE12-3: 12 cm
- SLV16-5: 8 cm
- SMC12-3: 12 cm

Multiple focal zones: Up to 3
Focal positions: Up to 8
Total Maps: 7
Tinted Maps: 3
Manual and AutoTGC™
HD/Digital Zoom

Color Flow Imaging (CFI), Color Power Imaging (CPI), and Directional Color Power Imaging (dCPI)

Bi-directional broadband Doppler Color Flow Velocity Imaging (CFI)
Broadband Color Power Imaging of Doppler Energy (CPI)
Directional Color Power Imaging (dCPI)
SuperCompound™ B-mode Image enhancement available in Color Modes
TouchRing™ Color Box size control

SL15-4 frequency range: 5.0 - 9.0 MHz
- Axial Resolution @ -6 dB: 0.3 – 0.5 mm
- Lateral Resolution @ -6 dB: 0.3 - 0.6 mm
- Number of lines: 256 Color + 256 2D lines
- Number of lines in Zoom: 512 lines
- Line Density (max): 5 lines/mm
- PRF Range: 260 - 28000 Hz
- Velocity Range: 2.0 - 72.0 cm/s

SC6-1 frequency range: 1.8 - 3.8 MHz
- Axial Resolution @ -6 dB: 2–3 mm
- Lateral Resolution @ -6 dB: 2-3 mm
- Number of lines: 96 Color + 192 2D lines
- Number of lines in Zoom: 192 lines
- Line Density (max): 5 lines/mm
- PRF Range: 240 - 10030 Hz
- Velocity Range: 5.0 - 103.0 cm/s

SL10-2 frequency range: 3.8 - 6.4 MHz
- Axial Resolution @ -6 dB: 0.4 – 0.6 mm
- Lateral Resolution @ -6 dB: 0.4 - 0.6 mm
- Number of lines: 192 Color + 192 2D lines
- Number of lines in Zoom: 192 lines
- Line Density (max): 5 lines/mm
- PRF Range: 183 - 29400 Hz
- Velocity Range: 2.0 - 170.0 cm/s

SE12-3 frequency range: 5.0 – 7.5 MHz
- Axial Resolution @ -6 dB: 1.5 – 3.5 mm
- Lateral Resolution @ -6 dB: 0.5 - 2.5 mm
- Number of lines: 96 Color + 192 2D lines
- Number of lines in Zoom: 192 lines
- Line Density (max): 3.5 lines/mm
- PRF Range: 260 – 12000 Hz
- Velocity Range: 2.0 - 72.0 cm/s

SLV16-5 frequency range: 5.0– 9.0 MHz
- Axial Resolution @ -6 dB: 0.3 – 0.5 mm
- Lateral Resolution @ -6 dB: 0.4 – 0.6 mm
- Number of lines: 192 Color + 192 2D lines
- Number of lines in Zoom: 384 lines
- Line Density (max): 5 lines/mm
- PRF Range: 260 - 18250 Hz
- Velocity Range: 2.0 – 72.0 cm/s

SMC12-3 frequency range: 5.0–7.5 MHz
- Axial Resolution @ -6 dB: 0.4 – 3.5 mm
- Lateral Resolution @ -6 dB: 1.6 - 2.5 mm
- Number of lines: 48-96 Color+192 2D lines
- Number of lines in Zoom: 96 lines

- Line Density (max): 3.5 lines/mm
- PRF Range: 2000 – 28000 Hz
- Velocity Range: 2.0 - 170.0 cm/s

Color Gain: 58 dB
Dynamic Range: 12 - 38 dB (60 dB max)
PRF Range: 260 - 16800 Hz

Velocity Optimization:
- 4 quick-set Velocity levels
- Min, Med, High, Max

Color Wall Filters: 4 levels
Color Smoothing: 7 levels
Color Persistence: 4 levels
Color/B-mode Priority Levels: 0-100%

Color Display Options:
- Color Blending
- Color Flash Suppression
- Color Zoom
- Color Invert
- Hide/Show Color display

Color Maps: 8 (CFI), 8 (CPI)

Display Depth (preset dependent):
- SL15-4: 8 cm
- SC6-1: 30 cm
- SL10-2: 8 or 12 cm
- SE12-3: 12 cm
- SLV16-5: 8 cm
- SMC12-3: 12 cm

Focal Zone: Auto set to color box, independent of 2D focal zone

Focal positions: Up to 8

Color Steering:
- Steering angle: -20° to 20° in variable increments (2°, 5°, 10°, 20°)
- Auto-Color Invert with Color Box steering in CFI
- Configurable steering control: Rotation can be set clockwise or counter-clockwise

Pulsed Wave Doppler Imaging (PW)

Pulsed Wave with Color Flow Imaging (CFI) in Duplex and Triplex modes

Transmit frequency:
- SL15-4: 5 MHz
- SC6-1: 2.25 MHz
- SL10-2: 3.75 MHz
- SE12-3: 4.5 MHz
- SLV16-5: 5 MHz
- SMC12-3: 4.5 MHz

FFT Processing: Up to 256 points
FFT Speed: Up to 1920 FFT's per second at highest
sweep

PW Sweep Speeds: 4 levels (Low, Med, High, Max)

PW Total Maps: 9
PW Chroma Maps: 4
Filters: 3 (Low, Med, High)
PRF Range: 200 – 28000 Hz
Dynamic Range: 32 dB (60 dB max)
PW Gain: 0-100% of Dynamic Range
Gain Adjustable in Frozen Review
Quick Auto Angle Steering: -60°/0°/60°
Fine Angle Correction: -88° to 88° in 1° steps

Sample Volume size: 0.5 mm to 2 cm

Configurable PW Invert option

Velocity Range (@ 1540m/s):
- SL15-4: 6 to 880 cm/s
- SC6-1: 12 to 1400 cm/s
- SL10-2: 6 to 1160 cm/s
- SE12-3: 6 to 1000 cm/s
- SLV16-5: 6 to 880 cm/s
- SMC12-3: 6 to 1000 cm/s

Minimum Detectable Flow Velocity (per wall filter cut-off value):
- SL15-4: 0.25 cm/s
- SC6-1: 0.51 cm/s
- SL10-2: 0.25 cm/s
- SE12-3: 0.25 cm/s
- SLV16-5: 0.25 cm/s
- SMC12-3: 0.25 cm/s

PW Display Options:
- 5 display formats (full screen trace, side by side, 1/3-2/3, 1/2-1/2, 2/3-1/3)
- Spectral Invert

PW Doppler Spectral AutoTrace:
- Real-time envelope detection of PW trace
- Sensitivity optimization: Low, Medium, High
- Optimization for traces above, below or both sides of baseline
- Mean Trace display
- Velocity measurement points display
- Configurable automated measurements display (PSV, EDV, RI, PI, TAMV, etc.)
- Cycle averaging with cycle select control

Full Suite of Measurements including:
- Peak Systolic Velocity
- End Diastolic Velocity
- Resistive Index
- Systolic/Diastolic Ratio
- Time Average Peak Velocity
- Acceleration Time
- Pressure Gradient
- Volume Flow

ShearWave™ Elastography Imaging (SWE)

ShearWave™ Color Box overlay on B-mode image[5]
All B-mode controls are available in SWE mode
SuperCompound™ B-mode Image enhancement available in SWE

SonicTouch™ Mach cone shear wave generation
- Real-time
- Fully automatic; No compression required
- Reproducible

UltraFast™ Data Acquisition Technology for SWE:
- SWE Data Frame Rate: 20 kHz
- Real-time Display Frame Rate: up to 4 Hz

SWE Optimization Controls:
Resolution, Standard, Penetration

Spatial Resolution of SWE
(mean of axial and lateral measures)

- SL15-4: 1.7 mm
- SL10-2: 1.8 mm
- SLV16-5: 1.6 mm
- SC6-1: 2.9 mm
- SE12-3: 2.4 mm
- SMC12-3: 2.4 mm

SWE Penetration (greater than):
- SL15-4: 3.0 cm
- SL10-2: 4.5 cm
- SLV16-5: 3.5 cm
- SC6-1: 7.5 cm
- SE12-3: 3.5 cm
- SMC12-3: 3.5 cm

SWE Elasticity Estimation Accuracy:
15% error or 3 kPa, whichever is greater

SWE Display formats:
- Single
- Dual Side-By-Side
- Dual Top-Bottom

SWE UI controls:
User adjustable SWE-box size
Spatial Smoothing: 10 levels
Persistence: 3 levels
Elasticity Maps: 6

[5]*SWE is not available in every application.*

SWE Quantification[2]:

Q-Box™ pixel accurate Elasticity quantification

Range of Elasticity: 0 – 300 kPa typical, 0 - 800 kPa in MSK preset

Optimized default Elasticity scale

Q-Box™ Precision: +/-15% of displayed value

UltraFast Doppler Imaging

UltraFast Doppler unites traditional 2D Doppler and PW Doppler with tremendous advantages:

Capture two seconds of Color Flow or Color Power data at frame rates of up to 200 Hz

Available on SL10-2 and SC6-1 probe in Vascular applications

Capture in all available sub-modes: Color Flow, Color Power and directional Color Power

Visualize of complex flow dynamics in slow motion

No trade-off between frame rate and color box size

No time delays in flow dynamics as in conventional Color Flow

Quad or full screen display of UltraFast™ Color Flow clip, Peak Systolic image, Mean of Velocities or Maximum of Velocities Images

Allows "PW Anywhere" spectral analysis, with up to 3 sample volumes analyzed simultaneously

Adjustable PW Baseline and Scale in Review

Full quantitative measurement capability (PSV, EDV, etc.) with independent AutoTrace or manual measurements

Automatic save and with retrospective analysis (and re-analysis) of data in Review

Contrast Imaging Mode[1]

Fully optimized Contrast Imaging mode for leading contrast agents[1]:

SonoVue®, Bracco

Sonazoid®, GE Healthcare

Simultaneous acquisition of B-mode and Contrast images in real-time

Low MI B-mode to minimize contrast agent destruction

Full screen or Side-by-side display

On-screen Contrast timer

Up to 5 minutes of streamed prospective cine capture

Independent control of contrast color maps, TGC curves, and Dynamic Range

Flash microbubble destruction mode

User adjustable number Flash frames

Micro-vascular Imaging (MVI) persistence imaging to assess slow micro-vessel perfusion

SonoVue® Late Phase specific imaging

3D Imaging

3D imaging in B-mode and ShearWave™ Elastography

Fully optimized Breast and General presets

Volume Sizes: Medium (10°), Large (20°) and X-Large (30°)

Fast volumetric acquisition < 10 seconds

Intuitive 3D navigation via touch screen and control panel

Quad-screen display format with Axial, Transverse and Coronal planes

MultiPlane and MultiSlice display formats also available

Slab Thickness controls with optimized rendering features

3D B-mode and SWE volume measurements

Save 3D volume loops

On-cart review package with advanced 3D real-time post-processing

Append additional images to any 3D study

[1]Contrast Imaging (CEUS) mode and associated features are not available in the United States.

[2]Quantitative elasticity scale and Q-Box™ tool are not available in the United States.

Dual Imaging

Full featured Dual Imaging Mode with independent controls and measures in side-by-side and top/bottom panes:

- Dual B-mode
- Dual B-mode & Color

Side-By-Side mode available for B-mode and Color visualization in a "dual-like" format

Panoramic Imaging

Extended field of view imaging in B-mode on the SL15-4 and Sl10-2 probes
Up to 60 cm of scanning length
Skin-line scaling markers
Curved distance measurement tool
Zoom, pan, rotate, trim panoramic images
Fully trimmable from start or end of the panoramic capture

Composite Imaging Modes

Composite imaging modes include:

- Simultaneous B-mode & Color Flow Imaging (CFI)
- Simultaneous B-mode & Color Power Imaging (CPI)
- Simultaneous B-mode & Directional Color Power Imaging (dCPI)
- Simultaneous B-mode & PW
- Simultaneous B-mode & SWE
- Simultaneous B-mode, Color & PW Doppler (Triplex)
- Simultaneous B-mode & Contrast[1] Imaging
- HD Zoom (high-resolution zoom)
  - o Available in B-mode, Color and SWE modes
  - o Up to 512 scan lines of resolution

[1]*Contrast Imaging (CEUS) mode and associated features are not available in the United States.*

Image Review Post-Processing and Cine Clip Capture Features

Post-Processing Controls

Image post-processing controls available while in frozen review:

B-mode:	Gain, Dynamic Range, TGC, B-mode Maps, Digital Zoom, SuperRes, Persistence, Measurements, Annotations, Body Markers
CFI/CPI/dCPI:	Color Map, Color Priority, Hide/Show Color, Blending, Baseline, Invert, Dynamic Range (dCPI), Digital Zoom
PW:	Gain, Dynamic Range, Sweep Speed, Smoothing, Display Format, PW Map, Angle Correct, Baseline, Invert, AutoTrace
SWE:	Display Format, Blending, Elasticity Map, Elasticity Range, Persistence
UltraFast:	PW Scale, PW Baseline, PW Wall Filter, Spectrogram Invert, PW Map, PW Angle Correction, Color Gain, B-mode Gain, Play Spectral data, Add/Remove/Adjust Spectrograms.

Cine Clip Capture and Review

Retrospective Clip Capture (full clip buffer)

Cine Clip buffer size (select modes):

B-mode:	5000 frames (approx)
CFI/CPI:	500 frames (approx)
PW:	500 columns (approx)

Prospective Clip Capture:

- Choice of 2, 5, 10, 30 sec, and 1 minute in conventional modes
- Independent control, up to 5 minutes in Contrast mode[1]

Frame-by-frame image review of clips while frozen

Trackball play, fast-forward play and frame reverse

Trim frames from beginning or end of retrospective or prospective clips

Available in all Imaging modes including Dual

Annotation and Body Markers

Annotations

Full annotations packages optimized for the following Application Presets:

- Breast, Thyroid, Abdominal, Liver, Intestine, Renal, Pelvis, Gyn, Scrotum, Prostate, MSK, Vascular and General Presets

Pediatric Annotations package available for custom presets

Fully user-customizable text and text-replacement lists per preset

Default settings are optimized for the most commonly used annotations

Customized home cursor position per display format

Text Replacement and Text Replacement Groups

Title Text and Free Text options available

Automatic line-wrapping

Intuitive on-screen text editing

Freely re-position annotations

Body Markers

Full pictographic body markers packages optimized for the following Application Presets:

- Breast, Thyroid, Abdominal, Liver, Intestine, Renal, Pelvis, Gyn, Scrotum, Prostate, MSK, Vascular and General Presets

Quickly depict transducer orientation directly on the body marker using the touch screen

Fully user customizable packages and association per imaging preset

Pediatric Body Markers package available for custom presets

On-Screen Biopsy Guidelines

On-screen biopsy guidelines for the SC6-1 and SE12-3 transducers

SE12-3: Guidelines at 2° and 3°

SC6-1: Choice of 4 angles - 14.8°, 20.4°, 26.6° and 33.7°

Biopsy mode disables AutoFreeze to enhance workflow

Guidelines correspond to appropriate CIVCO biopsy kits. See Accessories section for details.

Measurements

Available in frozen, dual and clip images

10 unique cursors per image

Unique measurement features:

- Measurements can be performed directly on the touch screen using a fingertip or stylus
- Measurements can be made across Dual images at the same scaling
- Estimated measurements can extend beyond the image area

Basic Measurements:

- Distance (mm or cm)
- Ellipse (major axis, minor axis, area, perimeter)
- Trace (area, perimeter)
- Curved Distance (mm or cm) in Panoramic Imaging only
- Volume (3 Distance)
- Generic Velocity (Vel), Peak Velocity (PSV), End Velocity (EDV), MDV (Minimum Diastolic Velocity
- Time Average Peak Velocity (TAPV), Time Average Mean Velocity (TAMV)
- % Diameter Reduction
- % Area Reduction
- Doppler Trace for Acceleration Time, Deceleration Time, Slope
- Doppler Time
- Q-Box™ tool with mean, max, min elasticity[2]
- Q-Box Ratio™ tool to quickly compare tissue elasticity values[2]
- Body Mass Index calculation

Advanced Measurements:

- Volume Flow (Diameter and TAMV)
- ICA/CCA Ratio for Carotid Flow
- Automatic IMT Thickness measurement with optimization and editing control
- Manual IMT measurements
- PW Doppler Spectral AutoTrace
- Pediatric Hip tools (Hip Angle and d:D ratio)

3D Measurements:

- 3 Distance Volume, Ellipse and Distance Volume (MultiPlane view)
- Trace Collection Volume (MultiSlice view)

Labeled Measurements:

- Measurements can be launched directly from a label
- Clearly identify common measurements on screen and in the report
- Common labels available for all clinical applications
- Bi-lateral measurement support for applications (e.g. Vascular) requiring paired measures

[2]*Quantitative elasticity scale and Q-Box tool are not available in the United States.*

Pulse Wave Velocity[3] Measurement Tool

Allows for the local measurement of the Pulse Wave Velocity in the carotid artery

Measures the Pulse Wave Velocity in the local imaging area- no need for pressure cuffs and accessory equipment

Utilizes UltraFast® imaging to capture the pulse velocity travelling along the arterial walls

Semi-automatic localization of the arterial segment

Parametric display of the pulse wave velocity over time

Automated calculation of the beginning of systole and end of systole pulse wave velocities

Available in the Vascular Carotid presets on the SL10-2 and SL15-4

Continue Exam

User configurable delay to End Exam:

- Midnight same day
- Midnight following day
- Never expires

Re-open an exam after it has been ended

Fully Append-able: Images, Measurements, Annotations, more...

New data is presented in separate series for tracking

Images cannot be deleted to prevent exam tampering

[3]*Pulse Wave Velocity measurement tool is not available in the United States.*

Worksheets

BI-RADS® Clinical Reporting

Integrated ACR BI-RADS® lexicon available during the current study

- Fully licensed from the American College of Radiology (ACR)
- Available in the Breast clinical application
- Per lesion BI-RADS® reporting: Up to 8 lesions can be characterized per study
- BI-RADS® results, images and measurements are fully integrated into the Report worksheet

Thy-RADS™ Clinical Reporting

Thy-RADS™ worksheet available during the live study

- Based on input of expert leaders in Thyroid imaging
- Available in the Thyroid clinical application
- Per nodule Thy-RADS™ reporting: Up to 12 nodules can be characterized per study
- Thy-RADS™ results, images and measurements are fully integrated into the Report worksheet

Clinical Report Worksheets

Five worksheets available to facilitate vascular reporting:

- Carotid
- Upper Extremity Arterial
- Lower Extremity Arterial
- Upper Extremity Venous
- Lower Extremity Venous
- Abdominal Aorta

Anatomical images with associated lateral measurements

Patient information automatically populated from study data

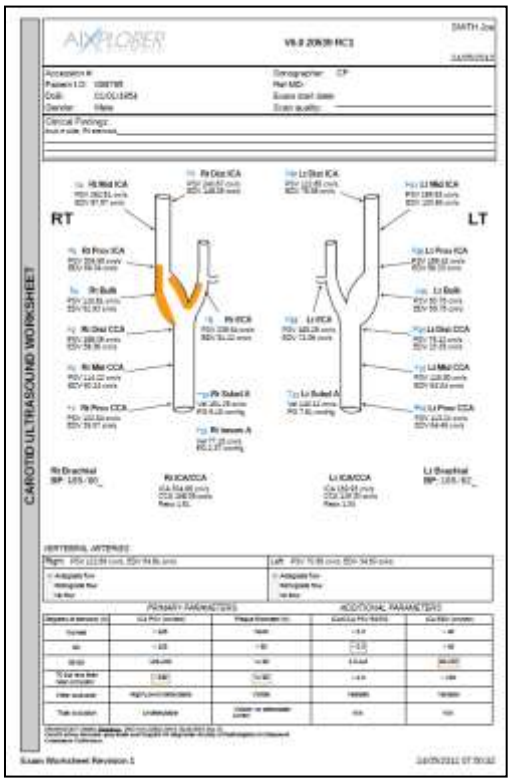
Measurements automatically populated via labeled measurements workflow

Large, easy to read design

Locations for key biometrics BP, ABI, etc.

SRU/Nascent criteria included for reference

Printable on a single paper sheet



Study Review

Quick Study Review

- Image thumbnails on main display allow quick review
- Preview, Open or Delete images instantly

Full Study Review

- Selectable study list with TouchRing™
- Display study images in 1, 2, 6, 12 and 20-up formats
- Replay cine-clips in real-time
- Export images directly to USB in JPEG format
- Export MPEG4 cine-clips directly to USB in High Definition (H264 or compressed format)

Configurable Reporting

ReportBuilder™ allows the user configurability of the information presented in the Report worksheet:

- User-uploadable hospital logo for Report header

- Integrated patient history from Patient Data entry screens
- Per image reporting with data reconciliation tools
- Measurements hyper-linked to study images for quick review
- Generous freeform text areas for exam comments and conclusions
- Report preview
- Export reports directly to USB as a Portable Document Format (PDF) file

ReportBuilder™ configurable components:
- Patient history
- Images
- Measurements
- BI RADS®
- Thy-RADS™
- Carotid Worksheet
- Reports
- Comments

DICOM & Connectivity

10/100/1000 baseT Ethernet compliant connectivity

Conforms to the following IHE Standards:
- Scheduled WorkFlow Integration Profile
- Performed Procedure Step Exception management
- Patient Information Reconciliation Profile
- IHE "Connect-a-thon" Tested

DICOM Storage Service Class:
- Allows connectivity to PACS
- Allows "save-as-you-scan" or "end of exam" transfer of study data

DICOM Modality Worklist:
- Auto-population of Patient Data Entry screen from hospital HIS/RIS server
- Sort or filter Worklist according to patent information (name, ID, date/time, etc.)
- Show Time/Date of last MWL query
- Automatic MWL Query options
- Patient-based MWL Query options using patient last name, character wildcards, etc.
- Use MWL off-line during portable exams

DICOM Modality Performed Procedure Step (MPPS):
- System receives and transmits info relating to the patient study and care cycle DICOM Storage Commitment Procedure (SCP)
- Provides commitment from the storage device that study data has been successfully transferred

DICOM Query and Retrieve (Q/R):
- Query the PACS server for previous exams
- Full native data query and retrieve capability:
  Ultrasound, Mammography, CT, MRI, X-Ray, Angiography, Nuclear Medicine, Radiofluoroscopy, Computed Radiography
- Retrieve Secondary Capture SOP Class images
- Automatically searches for previous exams of the current patient
- Easy to use search and retrieve tools for any patient
- Automated query and retrieve using MWL patient data
- Filter specific queried image types
- Disable multi-frame image sets for faster retrieve
- Retrieved images can be displayed side-by-side with real-time ultrasound on Aixplorer®
- Easy "fly-through" of stacked data (MR, CT) using the unique touch ring control
- Compatible with all DICOM ultrasound images from Aixplorer® or other vendors

DICOM Export to Media:
- Export studies in DICOM format to CD/DVD and USB DICOM Print
- Allows "print-as-you-scan" or "end-of-exam" printing to DICOM print devices
- Compatible with the most common DICOM printers (AGFA, KODAK, etc.)

Data Export

Export images to CD, DVD, USB memory device

- JPEG image /MPEG4-H264 Export to USB memory, CD/DVD
- Organized directory structure to quickly find exported studies

Export Reports directly to USB as a Portable Document Format (PDF) file

Clinical Data Export

Export ultrasound study data to facilitate clinical research studies

- Export data from selected studies in the patient directory to removable media (USB)
- Data can be exported in Aixplorer's Users Club (XML) or CSV formats

Data Management

Internal hard drive(s) for image and data storage

Raid mirror configuration: 2 hard drives configured for maximum storage and performance

Hard disk capacity: 320 Gb x 2

Image storage: 20000 images (estimated)

Study storage: 2000 typical studies (10 images and data)

Note: UltraFast Doppler data storage may reduce overall system storage capacity

Patient Privacy Features

Export images with or without patient sensitive identification

"Hide" patient identification on-screen during the exam

System Configuration

Personalized Institution Header for Reports

Flexible Regional settings for Language, Keyboard and On-board Help

Time & Date can be auto synchronized from the internet

Adjustable Control Panel lighting

User-friendly Touch screen calibration

System AutoFreeze Time Adjustable per Probe

Auto activation of Annotations, Body Markers, or Measurements on Freeze

User-controlled correlation/decorrelation of Doppler Color and PW scales

Configurable Annotations Libraries

Configurable Body Marker Libraries

Configurable Clinical Presets

Configurable Measurement Packages

Image Export Options:

Loop length and Compression

Enlarge Image formats for easier viewing on Workstations

Automatic Hard Disk Maintenance

Connectivity Association and Setups

Diagnostics and Service Access

DVD/CD

Integrated 28x DVD/CD read/write player/burner

SonicResearch™ Package[4]

Per-channel RF data access

UltraFast™ and Conventional RF data acquisition available

Configurable transmit and receive parameters

Output 2D data in RAW or Beamformed IQ data

Output 3D data as pre or post scan-converted Beamformed B mode data

Data is exported as a binary file and XML file via a USB connection

MATLAB® script compatible for reading and analyzing RF data

Available with SL15-4, SC6-1 and SLV16-5

[4]*SonicResearch Package is not intended or approved for diagnostic use.*

Peripherals & Ports Printer

Thermal image printers supported:

- Sony Black & White model UP-897
- Sony Color model UP-D25MD
- Sony Color model UP-D23MD

External plain-paper image/report laser printers supported:

- Xerox Phaser model 8570AN
- Xerox Phaser model 8560AN
- HP CP2025dn Color Laser
- HP P20255dn Black & White LaserJet

DICOM Printers: Various

Green Print Capability: 8 print layouts to conserve resources

USB/Ethernet Ports

3 USB ports allow image export to memory stick or portable hard drive

- 1 convenience port on rear of control panel
- 1 footswitch port on front side
- 1 port on rear side of cart

1 patient isolated Ethernet port (100 mbps)

Video Output

Integrated Digital Video Output (DVI) port for secondary display

Native 1680x1050 High Definition Output

Footswitch

Two-function footswitch

- Easily connects to front-side USB port
- Programmable from a set of frequently used operations

Accessories

Transducer Cable Assist

- Assists in removing the transducer cable weight from the operator and patient when scanning
- Particularly useful for 3D and SWE scanning

Transducer Connector Holder

- Facilitates on-cart storage of additional transducers

CIVCO Biopsy Kits:

- SC6-1: Bracket 672-002; needle guides 610-699
- SL15-4: Bracket 672-001, needle guides 610-1073
- SE12-3: Disposable bracket/guide 657-014
- SE12-3: Re-useable bracket/guide 610-666

Language Support

User Controls supported in five languages: English, French, German, Italian and Spanish

On-screen User's Guide (Help) available in five languages: English, French, German, Italian and Spanish

On-screen keyboards supported in seven languages: English, French, German, Italian, Spanish, Swedish and Russian

Remote Service Diagnostics Support

Remote access to the Aixplorer® to send and execute scripts

Capable of installing patches, retrieving logs files, launching diagnostic tools, or launching a system backup

Electrical/ Environmental Specifications

Dual Switching Power Supply

Power consumption:

- 100-120 VAC, 50 Hz / 60 Hz, 1500 W
- 220-240 VAC 50 Hz / 60 Hz, 1500 W

Temperature Workload >> 5118 BTU

Temperature Range:

- Operating: 10-35°C (50-95°F)
- Storage: -20–50°C (-4–120°F)

Humidity Range:

- Operating: 30-80%; Storage: 30-80%

Pressure Range:

- Operating: 525-795 mmHg
- Storage: 375–795 mmHg

Standards Compliance

SuperSonic Imagine is ISO 13485 and ISO 9001 certified.

Aixplorer® is a Medical Device in Class II per the FDA and in Class IIa per the European Medical Directive.

Aixplorer® is FDA and CE Mark approved. Canadian regulatory approval is pending for latest Aixplorer® release.

Aixplorer® conforms to the Digital Imaging and Communications in Medicine (DICOM) standard: PS 3 -2009

Aixplorer® is compliant with the following Quality Standards for Medical, Electrical, Electromagnetic Interference and General Safety:

- UL 60601-1
- CAN/CSA-C22.2 No. 601.1-M90
- IEC/EN 60601-1, 60601-1-1, 60601-1-2, 60601-1-4, 60601-1-6, 60601-1-8, 60601-2-37
- IEC/EN 61340-5-1, 5-2
- IEC 62304
- EN ISO 10993-1, 14971
- EN 50419
- NEMA UD 2, UD 3

SUPERSONIC imagine
The Theragnostic Company™

AIXPLORER® MultiWave®

SUPERSONIC imagine

The Theragnostic Company™

SuperSonic Imagine France
Les Jardins de la Duranne, Bât E & F
510, rue René Descartes
13 857 Aix-en-Provence, Cedex
France
Phone: +33 (0) 4 26 70 02 70
Fax: +33 (0) 4 42 52 59 21
Email: contactsFR@supersonicimagine.fr

SuperSonic Imagine USA
11714 North Creek Parkway N
Suite 150
Bothell, WA 98011
USA, North America
Phone: +1 (425) 686-6380 (General)
Phone: +1 (954) 399-9374 (Sales & Service)
Fax: +1 (425) 686-6387
Email: contactsUSA@supersonicimagine.com

SuperSonic Imagine GmbH Germany
Zepplinstr. 71-73
81669 München
Germany
Phone: +49 89 36036 844
Fax: +49 89 36036 700
Email: contactsDE@supersonicimagine.com

SuperSonic Imagine Ltd. UK Distribution
18 Upper Walk
Virginia Water
Surrey GU25 4SN,
United Kingdom
Phone: +44 (0) 845 643 4516
Email: contactsUK@supersonicimagine.com

SuperSonic Imagine Asia Distribution
Phone: +33 (0) 4 42 99 24 32
Fax: +33 (0) 4 42 52 59 21
Email: contactsASIA@supersonicimagine.com