SUPERSONIC® MACH® 20

UltraFast® Intelligence

SUPERSONIC imagine™

Intelligence and Innovation in Ultrasound

SuperSonic® MACH® 20 ultrasound systems leverage **15 years of clinical expertise** to help you handle exams with ease and confidence.

Understanding your everyday challenges, the SuperSonic® MACH® 20 performance meets innovation with leading edge UltraFast® technology.

The UltraFast® technology allows for an acquisition of up to **20,000 frames per second**[1], this technology offers new possibilities for patient management. The next generation of the UltraFast® technology has 5x more computing power[2].

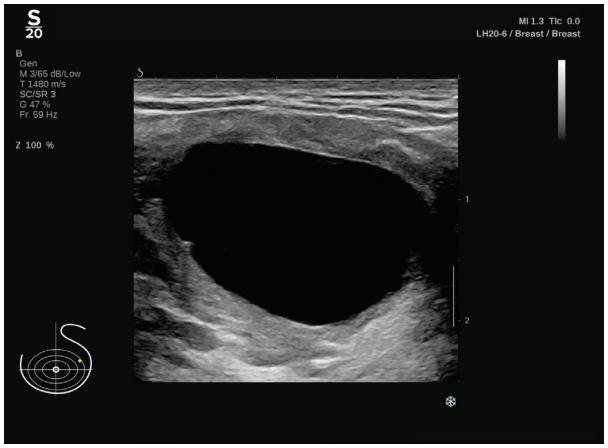
Image Quality for Improved Diagnostic Confidence

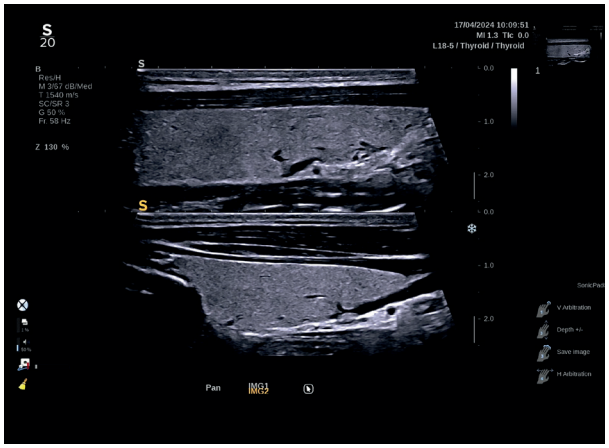
Designed for optimal sensitivity and operator comfort, our multi-application transducer family can also be used on other **SuperSonic® MACH® 30** products.

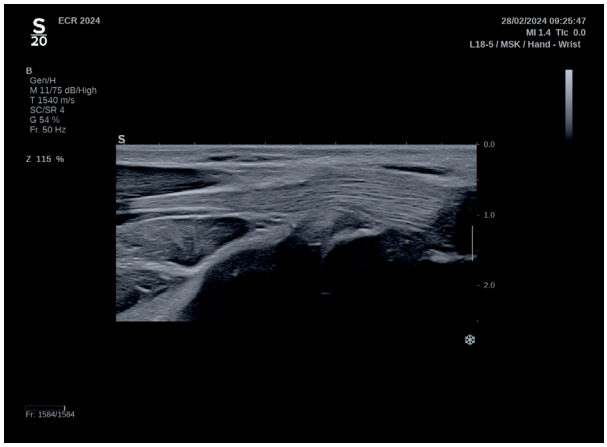
High Quality B-Mode Imaging

SuperSonic® MACH® 20 offers excellent B-mode image quality with incredible definition in both fundamental and harmonic imaging modes.

Designed to fit the needs of radiologists, a portfolio of advanced features is available to improve image quality, resolution and contrast.



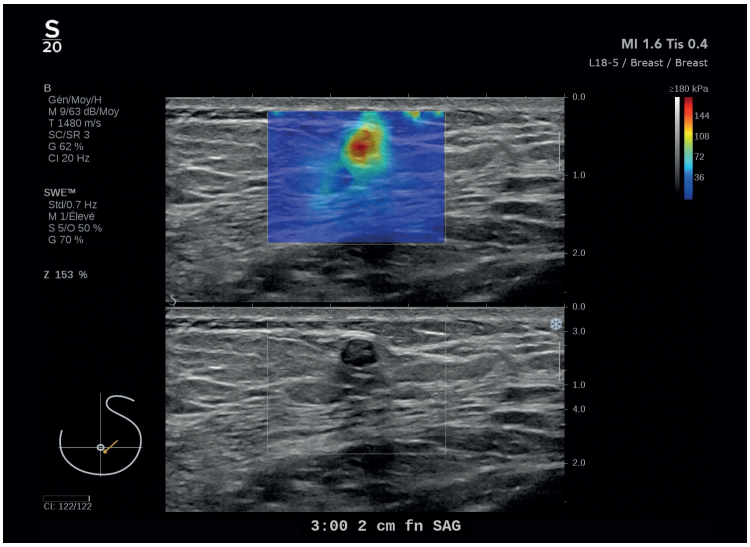




Innovative Imaging Modes

ShearWave® PLUS (SWE PLUS™ 3.0) elastography is capable of visualizing, analyzing and quantifying the tissue stiffness in real-time[3,4,5]. This non-invasive approach is clinically proven to be reliable and highly reproducible.

SuperSonic® MACH® 20 gives you the flexibility to benefit from proprietary SWE PLUS™ 3.0 elastography on the transducers of your choice.

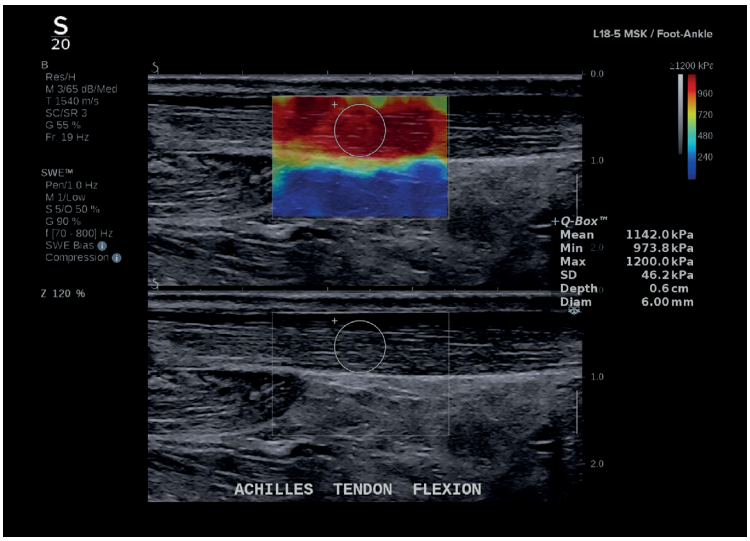


Key Attributes:

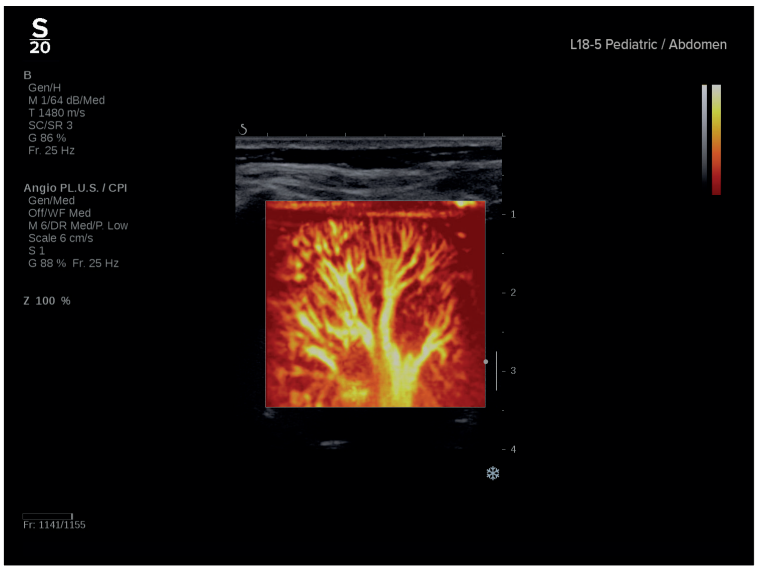
- Increased SWE PLUS™ 3.0 frame rates
- Accelerated filling of the SWE PLUS™ 3.0 box
- Increased penetration to visualize deep lesions
- Preserved quality the quality of the B-mode

Clinical Benefits of ShearWave® Elastography

ShearWave® PLUS elastography technology is the most clinically studied elastography in its category. SWE has been proven to be a complimentary tool for:

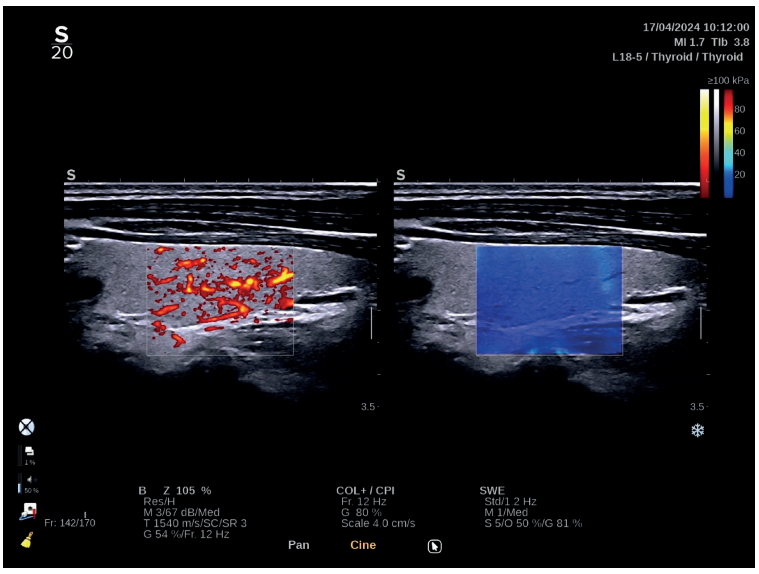


- Conventional ultrasound in breast imaging with over 225 publications in peer-reviewed journals[6]
- Management of patients with chronic liver disease, as demonstrated in more than 225 publications[7]
- Tendinopathies assessment and muscle disorders quantification, with more than 170 clinical publications[8]
- Detection and characterization of prostate lesions[9]



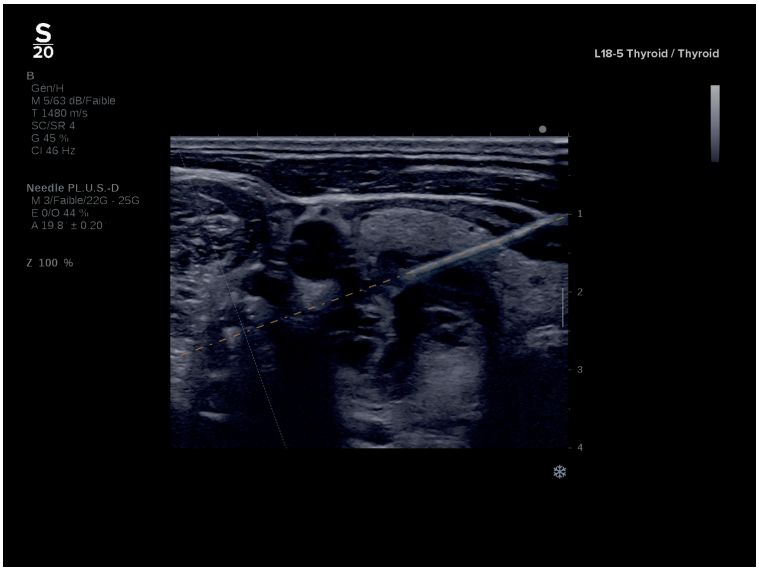
Angio PL.U.S™

This color mode offers enhanced sensitivity and resolution of micro blood flow at high frame rates.



TRIVU™

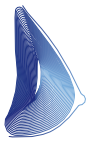
This unique real-time imaging mode allows you to display morphology, stiffness and flow information, all in the same image, simultaneously. TRIVU™ is the answer to confident and timely diagnosis.



Needle PL.U.S™

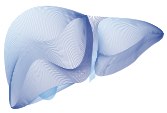
This real-time imaging mode allows you to perform biopsies with precision and confidence without loss of B-mode information. Needle PL.U.S™ addresses the challenge of limited needle visibility and the need to predict the needle trajectory.

General Imaging



Breast

With over 225 publications in peer-reviewed medical journals, SWE has been proven to be a complementary tool for: breast lesion diagnosis and characterization[10], biopsy planning[11] and treatment; therapy monitoring[12] and prognostics.
Allowing to perform exams with ease and confidence for all breast morphologies.

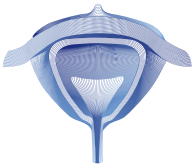


Liver

SuperSonic® MACH® 20 offers a suite of diagnostic imaging tools for non-invasive assessment and follow-up of liver diseases. The utility of SWE in the management of patients with chronic liver disease has been demonstrated in more than 160 clinical publications for evaluation[13] and diagnosis[14] of hepatic fibrosis and follow-up and monitoring of patients.

Muscles and Tendons

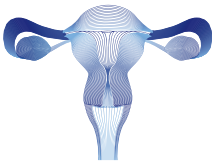
ShearWave® PLUS with its unique ability to analyze tissue stiffness (up to 1,200 kPa or 20 m/s), and in real time, is an asset for tendinopathy assessment and muscle disorders quantification. By adding innovative imaging modes, such as Angio PL.U.S™ and Needle PL.U.S™, ultrasound exams benefit from complementary diagnostic information.



Masculine Health

In addition to conventional ultrasound modes, ShearWave® PLUS in real time and Angio PL.U.S™ make ultrasound a multi-parametric modality. Thus, it can be used for the detection and characterization of prostate and testicular lesions. Targeted biopsies can also be performed with confidence and precision.

General Imaging



Obstetrics & Gynecology

The advanced visualization capabilities of SuperSonic® MACH® 20 let you clearly see fine morphological structural details of the ovaries, adnexae and endometrium, including difficult cases such as a fibroid uterus[15, 16]. The system reveals the smallest of fetal structures and let you explore morphology and detect abnormalities in early stages of the pregnancy.

Thyroid

Delivering accurate exam information critical to your thyroid diagnostic challenges.

- Simultaneously assess thyroid morphology, microvascularization and stiffness in real time with TRIVU™.
- Perform multiparametric nodule characterization and TI-RADS classification.
- Take advantage of ShearWave® elastography, which renders a real-time, quantitative (kPa) color-coded assessment, to characterize both thyroid nodules and cervical lymph nodes and guide biopsies.

Pediatric

Dedicated optimized presets to meet all imaging needs.

- Gain key information (morphology, stiffness and microvascularization) with real-time multiparametric assessments to enhance diagnostic efficiency and patient monitoring.
- Leverage new ultrasound biomarkers to optimize and guide patient management at an early stage.
- Tailor it to your requirements; a family of pediatric transducers and application-specific presets.

Vascular

Expanded capabilities thanks to a unique software based technology.

- Perform stenosis staging in 3 different locations simultaneously and in a single acquisition during the same cardiac cycle with UltraFast® Doppler.
- Conduct ultrasensitive blood flow analysis without compromise with Angio PL.U.S™.
- Improve patient management and monitoring with advanced vascular analysis.

Power at Your Fingertips

SuperSonic® MACH® 20's transducer portfolio leverages and combines:

- Unique SuperSonic Imagine® 100% software beamforming
- UltraFast® Imaging
- Single crystal technology
- Next generation pinless connector for easy handling
- Re-designed housing facilitating one hand manipulation

C6-1X SINGLE CRYSTAL CURVILINEAR

Single crystal element
192

Bandwidth
1-6 MHz

Clinical Applications

- Abdominal
- Pediatric
- Pelvis
- Thyroid
- OB-GYN
- Vascular

C9-2X SINGLE CRYSTAL CURVILINEAR

The perfect solution for narrow intercostal spaces without compromise on penetration.

Single crystal element
192

Bandwidth
2-9 MHz

Clinical Applications

- Abdominal
- Breast
- OB-GYN
- Pediatric
- Thyroid

L18-5 LINEAR

Composite elements
256

Bandwidth
5-18 MHz

Clinical Applications

- Abdominal
- Breast
- Musculo-skeletal
- Pediatric
- Thyroid
- Vascular
- Small parts

LH20-6 LINEAR

Composite elements
192

Bandwidth
6-20 MHz

Clinical Applications

- Musculo-skeletal
- Vascular
- Breast
- Pediatric
- Small parts

L10-2 LINEAR

Composite elements
192

Bandwidth
2-10 MHz

Clinical Applications

- Abdominal
- Breast
- Musculo-skeletal
- Pediatric
- Thyroid
- Vascular
- Small parts

E12-3 ENDOCAVITARY

Composite elements
192

Bandwidth
3-12 MHz

Clinical Applications

- OB-GYN
- Prostate

P5-1X SINGLE CRYSTAL PHASED ARRAY

Single crystal element
96

Bandwidth
1-5 MHz

Clinical Applications

- Vascular abdominal
- TCD
- Cardiac

MC12-3 MICRO-CONVEX

Composite elements
192

Bandwidth
3-12 MHz

Clinical Applications

- Pediatric
- Vascular

Accessories

- **Wi-Fi**
- **High-end Bar Code Reader**
- **Black and White Thermal Printer**
- **Two or Three Foot Switch Pedal**
- **Integrated Gel Warmer**
- **Biopsy Accessories and Kits**
- **Flex Transducer Cable Stand**

Designed to be the New Standard

1. Widescreen 21.5" Full HD monitor
Image uniformity, deep blacks and refined detail

2. Large 13.3" Full HD touch display
More flexibility to define your workflow

3. Intuitive control panel with revolutionary SonicPad®
Improved user experience and workflow

4. Low noise level, optimized cooling fan architecture
Reduced noise for all environments

5. Reduced footprint
Suitable for any practice

Connected Experience

SuperSonic® MACH® facilitates exchanges and ensures that information is always available in the right place at the right time.

- On-time intervention through remote system monitoring and diagnostics
- Access to new options and features with an online software update
- Disk encryption at installation to protect patients personal data
- Password-requiring login to ensure that user preferences are preserved
- DICOM compatibility and multiple connection ports for more flexibility

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5 - Garcovich M, Veraldi S, Di Stasio E et al. DLiver Stiffness in Pediatric Patients with Fatty Liver Disease: Diagnostic Accuracy and Reproducibility of Shear-Wave Elastography. Radiology . 2017 Jun; 283(3):820-827.

6 - Peer Reviewed Articles ShearWave™ Elastography for Breast Imaging. MKG.EC.335.

7 - Peer Reviewed Articles ShearWave™ Elastography for Liver and Abdominal Imaging. MKG. EC.337.

8 - Peer Reviewed Articles ShearWave™ Elastography for Musculo-Skeletal System. MKG. EC.337.

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14- Garcovich M, Veraldi S, Di Stasio E, et al. Liver Stiffness in Pediatric Patients with Fatty Liver Disease: Diagnostic Accuracy and Reproducibility of Shear-Wave Elastography. Radiology. 2017;283(3):820–827.

15- Engineering Clinical Evaluation (Ece) V10 Endocavity Probes Evaluation in Gynecology Dr Shojai Aix En Provence; PM.TP/TR.034

16- V10 CMR Validation – Institut de Radiologie de Paris – Gynecology; PM.TP/TR.036

supersonicimagine.com

SuperSonic Imagine®
135 rue Emilien Gautier
13290 Aix-en-Provence
For more information contact:
+33 (0)4 42 99 24 24
contacts@supersonicimagine.com

Indications for Use: The SuperSonic Imagine® - SuperSonic® MACH® range ultrasound diagnostic systems and transducers are intended for general purpose pulse echo ultrasound imaging, soft tissue viscoelasticity imaging and Doppler fluid flow analysis of the human body. The SuperSonic® MACH® ultrasound diagnostic systems are indicated for use in the following applications, for imaging and measurement of anatomical structures: Abdominal, Small Organs, Musculoskeletal, Superficial Musculoskeletal, Vascular, Peripheral Vascular, Intraoperative, OB-GYN, Pelvic, Pediatric, Transrectal, Transvaginal, Urology, Neonatal/Adult Cephalic and Non-invasive Cardiac. In addition, the SuperSonic Imagine® - SuperSonic® MACH® ultrasound diagnostic systems and associated transducers are intended for: measurements of abdominal anatomical structures; measurements of broadband shear wave speed, and tissue stiffness in internal structures of the liver and the spleen; measurements of brightness ratio between liver and kidney; visualization of abdominal vascularization, microvascularization and perfusion; quantification of abdominal vascularization and perfusion. The shearwave speed, beam attenuation, viscosity and stiffness measurements, the brightness ratio, the visualization of vascularization, microvascularization and perfusion, the quantification of vascularization and perfusion may be used as an aid to clinical management of adult and pediatric patients with liver disease. It is intended for use by licensed personnel qualified to direct the use of the medical ultrasound devices. CE certificate no. 26415, FDA cleared K180572.