



Introducing the SuperSonic™ MACH™ 20 Ultrasound Imaging Platform

# SUPERSONIC™ MACH™ 20

## UltraFast Intelligence

# Intelligence and Innovation in Ultrasound

**SuperSonic™ MACH™ 20** ultrasound systems leverage **10 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 the acquisition up to **20,000 frames per second<sup>1</sup>**, this technology offers new possibilities for patient management. The next generation of the UltraFast technology — has 5x more computing power<sup>2</sup>.



## AN ECO-DESIGNED PRODUCT

The company is certified **ISO 14001**. This certification confirms that the company has voluntarily implemented an environmental management policy, demonstrating a strong commitment to minimize environmental impact throughout the product' life cycle.

1 - Bercoff J, Ultrafast Ultrasound Imaging. Ultrasound Imaging - Medical Applications. 2011 Aug; DOI: 10.5772/19729

2 - In comparison with Aixplorer® MultiWave™ systems

# Image Quality for Improved Diagnostic Confidence

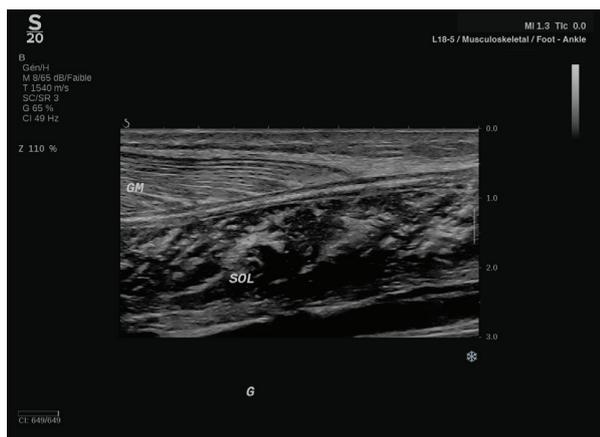
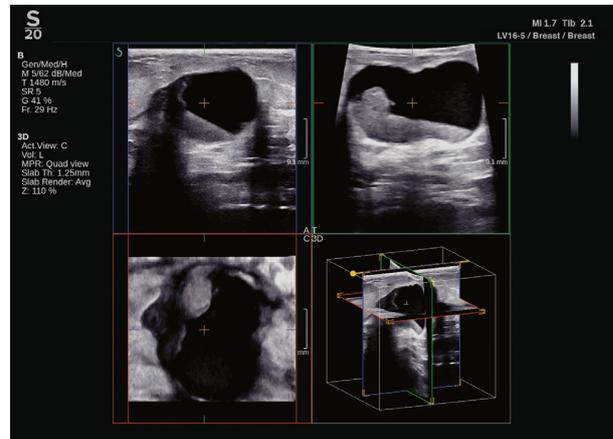
Designed for optimal sensitivity and operator comfort, our multi-application transducer family can also be used on other **SuperSonic MACH 20** products.



## High Quality B-Mode Imaging

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

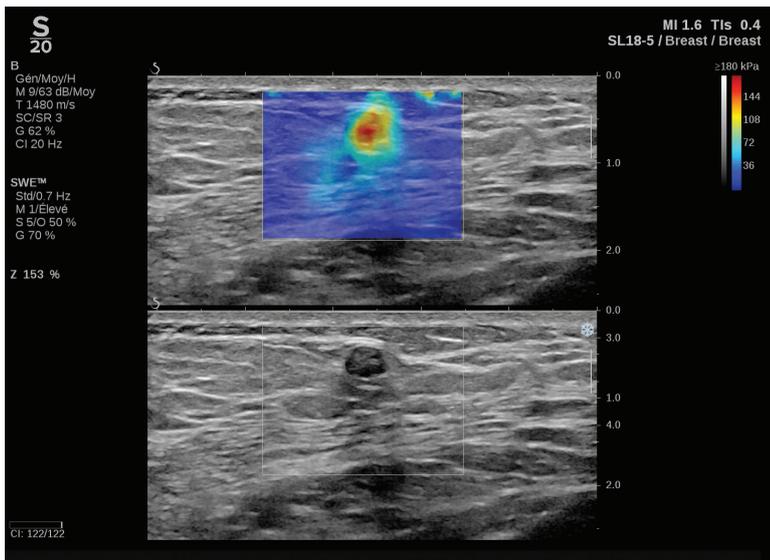
Designed to fit the needs of radiologists, a portfolio of advanced features is available to improve image quality, resolution and contrast.



# Innovative Imaging Modes

**ShearWave™ PLUS (SWE PLUS) elastography is capable of visualizing, analyzing and quantifying the tissue stiffness in real-time<sup>1,2,3</sup>.** This non-invasive approach is clinically proven to be reliable and highly reproducible.

**SuperSonic MACH 20** gives you the flexibility to benefit from proprietary ShearWave PLUS elastography on the transducers of your choice.



## Key Attributes:

- Increased SWE PLUS frame rates
- Accelerated filling of the SWE PLUS box
- Increased penetration to visualize deep lesions
- Preserving 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 nearly 200 publications in peer-reviewed journals<sup>4</sup>
- Management of patients with chronic liver disease, as demonstrated in more than 160 publications<sup>5</sup>
- Tendinopathies assessment and muscle disorders quantification, with more than 170 clinical publications<sup>6</sup>
- Detection and characterization of prostate lesions<sup>7</sup>

1 - Cosgrove D, Berg W, Doré J et al. Shear wave elastography for breast masses is highly reproducible. *European Radiology*. 2012 May; 22(5): 1023–1032.

2 - Hudson J, Milot L, Parry C et al. Inter-and intra-operator reliability and repeatability of shear wave elastography in the liver: a study in healthy volunteers. *Ultrasound Med Biol*. 2013 Jun;39(6):950-5

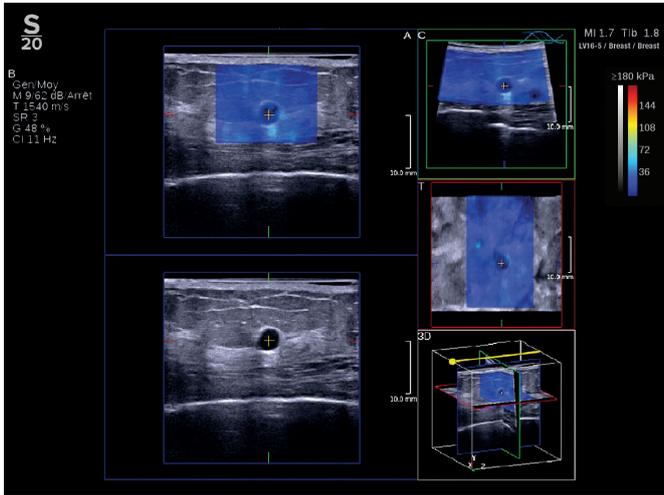
3 - Garcovich M, Veraldi S, Di Stasio E et al. DLiver Stiffness in Pediatric Patients with Fatty Liver Disease: Diagnostic Accuracy and Reproducibility of Shear-Wave Elastography. *Radiology* . 2017 Jun; 283(3):820-827.

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

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

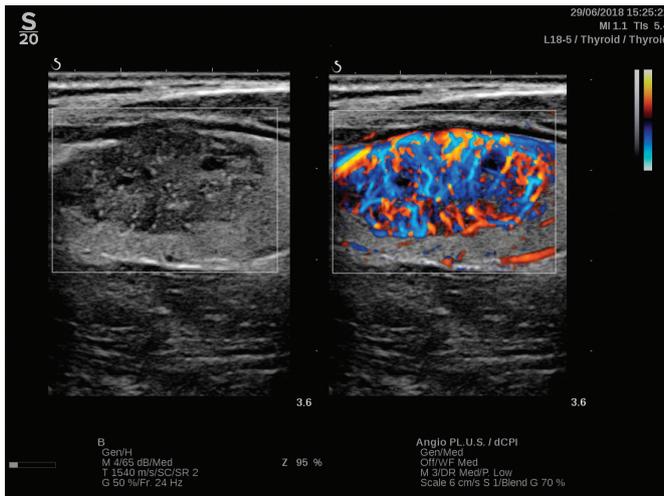
6 - Peer Reviewed Articles ShearWave™ Elastography for Musculo-Skeletal System. MKG.EC.337

7 - Correas J-M, Tissier A-M, Khairoune A et al. Prostate Cancer: Diagnostic Performance of Real-Time Shear-Wave Elastography. *Radiology* 2015 Apr;275(1):280-9.



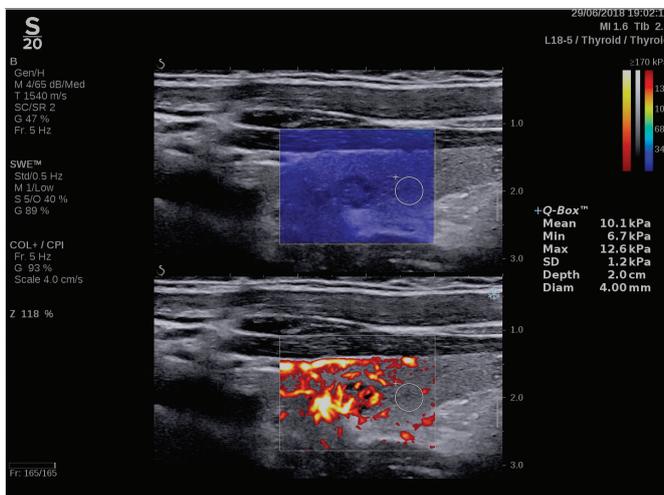
## 3D Breast Imaging

The SuperSonic MACH ultrasound systems now provide access to high-resolution B-mode and ShearWave PLUS elastography 3D volumes. 3D ultrasound imaging opens the door as an additional application in breast diagnostics and may support in accurate interpretation.



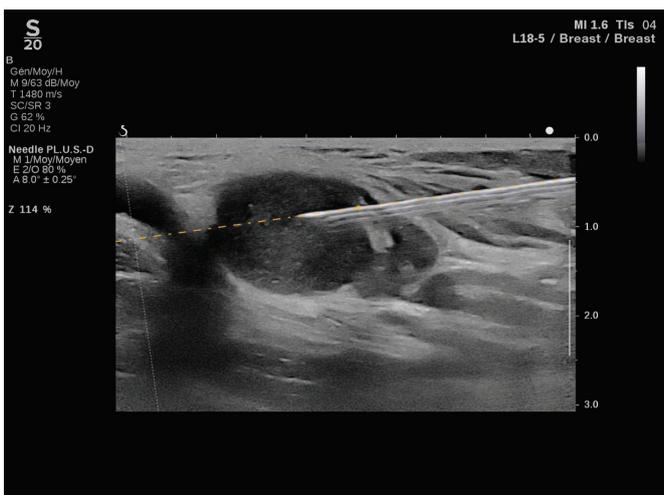
## Angio PLUS

Angio PLUS is a color mode that offers enhanced sensitivity and resolution of blood flow. Angio PLUS provides the possibility to explore microvascular flow.



## TriVu Imaging

TriVu is a real-time imaging mode that 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 PLUS

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

# General Imaging



## Breast

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With over 200 publications in peer-reviewed medical journals, SWE has been proven to be a complementary tool for: breast lesion diagnosis and characterization<sup>1</sup>, biopsy planning<sup>2</sup> and treatment; therapy monitoring<sup>3</sup> and prognostics. Allowing to perform exams with ease and confidence for all breast morphologies.



## Liver

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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<sup>4</sup> and diagnosis<sup>5</sup> of hepatic fibrosis and follow-up and monitoring of patients.



## Muscles and Tendons

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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 PLUS and Needle PLUS, ultrasound exams benefit from complementary diagnostic information.



## Masculine Health

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In addition to conventional ultrasound modes, ShearWave PLUS in real time and Angio PLUS 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.



## Ob Gyn

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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<sup>6,7</sup>. The system reveals the smallest of fetus structures and let you explore morphology and detect abnormalities in early stages of the pregnancy.

1 - Berg WA, Cosgrove DO, Doré CJ, et al. Shear-wave elastography improves the specificity of breast US: the BE1 multinational study of 939 masses. *Radiology*. 2012 Feb;262(2):435-49.

2 - Mullen R, Thompson JM, Moussa O et al. Shear-wave elastography contributes to accurate tumour size estimation when assessing small breast cancers. *Clin Radiol*. 2014;69(12):1259–1263.

3 - Lee SH, Chang JM, Han W, et al. Shear-Wave Elastography for the Detection of Residual Breast Cancer After Neoadjuvant Chemotherapy. *Ann Surg Oncol*. 2015;22 Suppl 3:S376–S384.

4 - Gao Y, Zheng J, Liang P, et al. Liver Fibrosis with Two-dimensional US Shear-Wave Elastography in Participants with Chronic Hepatitis B: A Prospective Multicenter Study. *Radiology*. 2018 Nov;289(2):407-415.

5 - 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.

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

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

# 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 20 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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## SuperSonic Imagine

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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.

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