IBS GROUPE

STERNMED®

Sonos 10

diagnostic ultrasound system

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Sonos 10 is a digital color ultrasound system that supports different applications and providing a wide range of professional clinical applications: ABD, OB / GYN, Vascular, MSK, Small Parts, Urology, Pediatrics.

FEATURES

Full display Mode
Full-screen mode without losing image resolution provide you more details for more accurate diagnosis.

HIP Graf
Use a graph for hip orthotics diagnosis, help the doctor to give an easier and more accurate diagnosis during the pediatric hip scanning. Different angle indicates different level of hip deformity, which is easier and more obvious to see with the aid of the graph. (I, II, D IIIa, IIIb).

Auto IMT Function
Automatically traces the intima and measures the thickness of the intima. This allows you to measure the intima faster, more easily and more accurately.

Super Needle
With Super Needle, clinicians can see needle inside tissue more clearly during medical procedures. (Needle angle up to ±30°)

ADVANCED TECHNOLOGIES

X-contrast

- The Sonos 10 allows one-touch user-adjusted contrast resolution based upon differences in tissue density.
- Enhance, Normal, and Suppress settings increase or decrease contrast resolution, based on the tissue type and user preference.

FHI

- FHI is an innovative harmonic imaging technology that uses multiple transmission and receiving methods based on the patients' size and weight. This allows the Sonos 10 to maintain image resolution when imaging larger patients.
- Traditional Tissue Harmonics and Phased Harmonics compromise image quality and resolution when penetration is increased.
- FHI technology greatly improves diagnostic abilities and clinical confidence in larger, difficult-to-image patients.

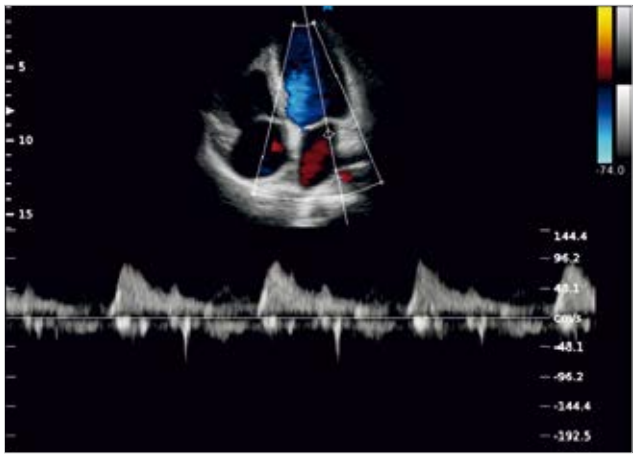
Q-beam

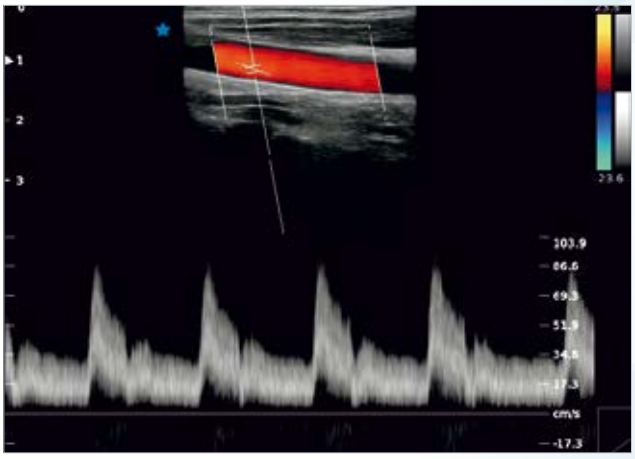
- Compared to the traditional dual-beam former on most ultrasound machines, the Sonos 10 uses quad-beam for ultrasound
- Doubles the volume of signals received over traditional methods, increasing image resolution and generating more accurate images.
- Produces higher frame rates, ensuring better diagnostic onfidence and efficiency, especially for moving organs.

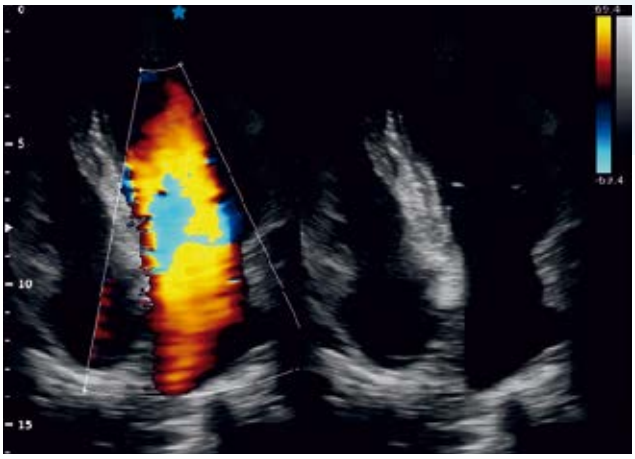
Q-flow

- This adaptive color detection technology can automatically adjust the assessment of color signal and noise according to different tissues.
- As a result, color sensitivity of low-velocity flow is significantly enhanced.

EXCELLENT CLINICAL IMAGES







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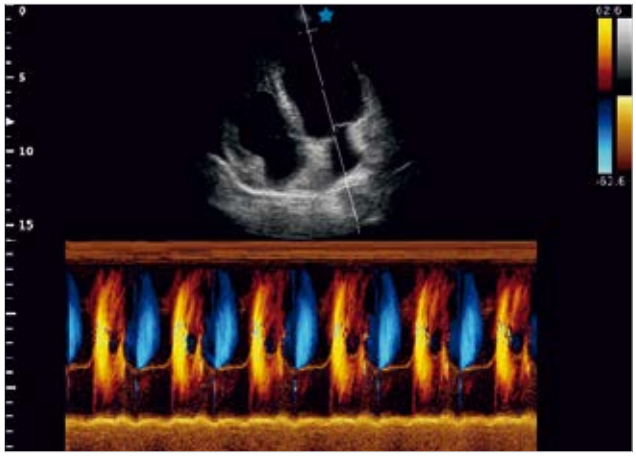

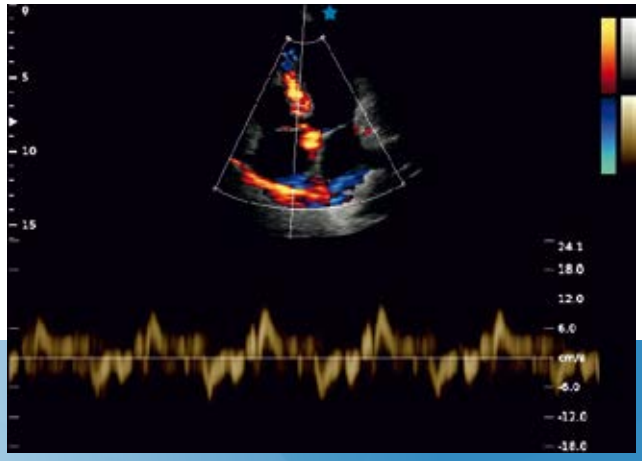

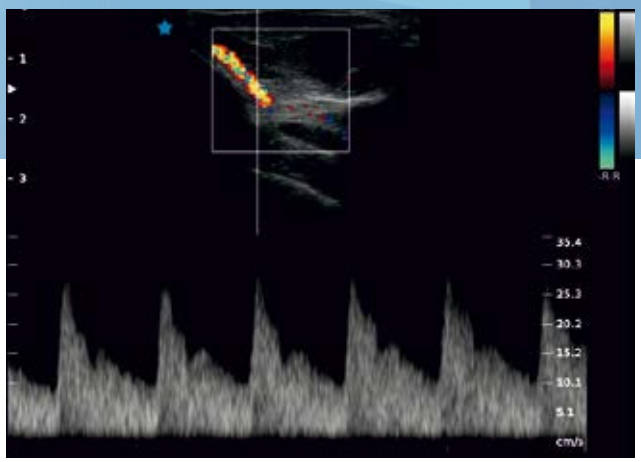

TECHNICAL SPECIFICATION
Sonos 10 | SternMed diagnostic ultrasound system

USER INTERFACE		
Operation Panel	• Alphanumeric keyboard • 8 TGC Slides	
Monitor	• Interactive backlit keys	
	• High resolution color LCD • 15" Diagonal dimension • Resolution 1024X768 • Brightness and contrast adjustment • Integrated speaker with adjustable Volume	
SYSTEM OVERVIEW		
Applications	• Abdominal • Cardiac • Small organ • Peripheral Vascular • Transvaginal • Transrectal	• Musculo-skeletal • Pediatric • Fetal • OB • GYN • Urology
Scanning Method	• Electronic convex • Electronic linear • Electronic micro convex • Electronic phased array	
Transducer Types	• 3.5 MHz Convex probe (2.0 - 6,8 MHz) • 7,5 MHz Linear probe (4.0 - 15.0 MHz) • 7,0 MHz Trans-rectal probe (4.0 - 15.0 MHz) • 6.0 MHz Trans-vaginal probe (4.0 -12 .0 Mhz) • 7.5 MHz Trans-vaginal probe (4.0 -15 .0 Mhz) • 2.5 MHz Phased array probe (Adult) (1.5 -5.3 Mhz) • 5.0 MHz Pediatric Micro-Convex probe (4.0 -10 .7 Mhz) • 3.0MHz Micro-Convex probe (2.0 - 6.8 Mhz) • 6.0 MHz Pediatric Micro-convex probe (4.0 -15 .0 Mhz)	
Image Modes	B Mode, B/M mode, M mode, 2B Mode, 4B Mode, CFM Mode, 2D Steer, PW Mode, B/BC Mode, Triplex, Quadplex, CW Mode (option, CPA Mode, DPD Mode, TDI (option), Color M Mode (option), Trapezoidal Mode, ECG (option), Super Needle (option)	
Display Mode	• Quad/dual display (Only for B) • Duplex mode: B+CFM, B+CPA, B+DPD, B/M • Triplex mode: B+CFM+PW, B+CPA+PW, B+DPD+PW,	
Display Annotation	Logo, hospital name, exam date/time, mechanical index, tissue thermal index, patient name and patient id, system status (real-time or frozen), Gray/color bar, cine guide, measurement summary window, measurement results window, probe type, frequency, menu indication, trackball, functions indication, imaging parameters	
Standard Configuration	• High resolution 15" LED display • 2 active probe ports(standard) • Pulse Wave Doppler • Color Doppler Flow Imaging • Power Doppler Flow Imaging • Directional Power Doppler Flow Imaging • ≥32G integrated capacity • USB ports: 6 • Ethernet port :1 • S-video out port :1 • Video out port :1 • VGA port :1 • DVI port :1 • ECG port :1 • Foot switch :2 • Remote :1	• General measurement package • Clinical measurement packages • Multi-language screen display • Review: images review system • Archive: patient information management system • Reporting system • AIO (Automatic Image Optimization) • Intelligent Zoom • Speckle Reduction Algorithm (SRA) • Q-Image software package • X-contrast • Q-beam • Q-flow

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SYSTEM OVERVIEW		
Software Options	• DICOM (storage, print, worklist) • Super needle • CW	• TDI • Color M • ECG
Hardware Option	• Footswitch • ECG Lead	
Peripherals	B&W Video Printer Color printer (optional)	
IMAGING PROCESSING AND PRESENTATION		
B Mode	• Gain : 0~255 (256 steps) • Frame rate : Max1820 (Depends on the probes) • STC: 8 segments • Depth: Max. 31.5cm (Depends on the probes) • Freq: Min:1.5MHz, Max: H15.0MHz (Depends on the probes) • FHI: On/Off • X-CONTRAST: Enhance/ Normal/ Suppress • U/D flip • Zoom: 17 levels • Full screen • Focus number: 1~9 • Compound: On/Off • SRA: On/Off • Density: High/Low • Dynamic: 60~165 (16 steps) • Focus position: 16 steps • Q-Image: 0~3 (4 steps) • Persistence: 0~7 (8 steps) • B Rejection: 0~256 (257 steps) • Scan width: 14%~100% (16 steps) • Gamma: 0~8 (9 steps) • Smooth: 0~7 (8 steps) • Edge enhance: 0~6 (7 steps) • Acoustic power: 0~100%(101 steps) • L/R Flip • Chroma: 0~28 (29 steps) • 2D Map: Default, 1~20 (21 steps) • Zoom coef: 60%~100% • Trapezoidal imaging (only for linear transducer) : On/Off • 2D steer: -20~20(41 steps) • Rotation: 0°, 90°, 180°, 270°	
M Mode	• Color Map: Default, 1~20 (21 steps) • Speed: 1~4 (4 steps) • Layout L/R, U/D • M 2D map: Default, 1~20 (21 steps) • M chroma: 0~8 (9 steps)	

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IMAGING PROCESSING AND PRESENTATION	
Color Mode	• Gain: 0~255 (256 steps) • Frame rate: Max173 (Depends on the probes) • Freq.: Min: 1.5MHz, Max: 10.0MHz (Depends on the probes) • Wall filter: 0~3 (4 steps) • Q-flow: On/Off • Color Invert: On/Off • Q-beam: On/Off • Steer (only for linear transducer): -20~20 • Color Map: 0~8 (9 steps) • PRF: Min: 150Hz, Max: 14.9kHz (Depends on the probes) • Persistence: 0~7 (8 steps) • Baseline: -3~3 (7 steps) • Color mode: Velocity, Variance • Wall Thre.: 0~14 (15 steps) • Blood Effection: Smooth, Resolution, Resolution2, Resolution3 Density: High/Low • B/BC: On/Off • ROI Size: Min: 0.14cm2, Max: 178 cm2 (Depends on the probes) • CF Mode: Variance / Velocity
CPA/DPD Mode	• Gain: 0~255 (256 steps) • Frame rate: Max173 (Depends on the probes) • Freq.: Min: 1.5MHz, Max: 10.0MHz (Depends on the probes) • Wall filter: 0~3 (4 steps) • Q-flow: On/Off • Q-beam: On/Off • Steer (only for linear transducer): -20~20 • PRF: Min: 150Hz, Max: 16.0kHz (Depends on the probes) • Persistence: 0~7 (8 steps) • Wall Thre.: 0~3 (4 steps) • Blood Effection: Smooth, Resolution, Resolution2, Resolution3 • Density: High/Low • DPD • ROI Size: Min: 0.14cm2, Max: 178 cm2 (Depends on the probes) • Gain: 0~255 (256 steps) • Freq.: Min: 1.5MHz, Max: 10.0MHz (Depends on the probes) • Wall Filter: 0~3 (4 steps) • Triplex mode: On/Off • Steer: -20, -15, -10, 0, 10, 15, 20 • Invert: On/Off • PW chroma: 0~28 (29 steps) • Audio: 0~100% • PRF: Min: 150Hz, Max: 20kHz (Depends on the probes) • Speed: 0~2 (3 steps) • Baseline: 0~6 (7 steps) • Angle: 0~70°(8 steps) • SV: 1.0~8.0mm • D 2D map: Default, 1~20 (21 steps) • Spectrum Enhance: 0~3 (4 steps) • Dynamic Range: 46~67 • Threshold: 1~25 (26 steps) • DTrace Smooth: 0~3 (4 steps)

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IMAGING PROCESSING AND PRESENTATION		
TDI mode	• Gain: 0~219(220 steps) • Frame rate: Max248 • Freq.: 1.5~4.0Mhz • Wall filter: 0~3 (4 steps) • Color Invert: On/Off • Density: High/Low • Color Map: 0~10 (11 steps) • PRF: 1000~6870Hz • Persistence: 0~7 (8 steps) • Baseline: -3~3 (7 steps) • Wall Thre.: 0~3 (4 steps) • Blood Effection: Smooth, Resolution, Resolution2, Resolution3 • ROI Size: Min:2.18cm2 , Max: 178 cm2	
CW mode	• Gain: 0~255 (256 steps) • Wall Filter: 0~3 (4 steps) • CWD chroma: 0~8 (9 steps) • Audio: 0~100% • PRF: 2000Hz~25.0kHz • Speed: 0~2 (3 steps) • Base line: 0~6 (7 steps) • CW 2D map: Default, 1~20 (21 steps) • Spectrum enhance: 0~3 (4steps) • Dynamic: 46~67	
Cine-loop	• Support 2D, M, PW, CFM, CPA, DPD • Simultaneous and independent review in Triplex mode • Cine-loop auto/manual • Variable cine playback speed • User-define start and end frame of cine storage • User-define start and end frame of cine review • storage in hard disk and display in real-time modes • Slide show: slide show function	
Storage	• 32G Capacity • USB driver • Still images storage format: BMP • Still images export format: BMP, JPG • Cine-loops storage format: CINE • Cine-loops export format: AVI	
Review	• Image review Layout:1×1,2×2, 4×4 • Image management	
Archive	• Patient info • Review report • Backup exam • Restore exam • Send exam • Delete exam	• Patient view • Study view • Expand all • Collapse all • Select all

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MEASUREMENT & CALCULATION	
General Measurement Package	• Software packages for various specific clinical use • Comprehensive analysis methods • Clinical analysis reports
B mode measurement	Distance, Perimeter/area, Volume(1Distance), Volume(1Distance), -Volume(1Ellipse), Volume 2Distance , Volume 3Distance , Volume(1Distance1Ellipse), Ratio(distance/area), Angle, Histogram(rectangular/ellipse/trace), profile
PW mode measurement	M distance, M Time, Velocity, Heart Rate
M mode measurement	Velocity, Distance, Peak, Trace, StD%, StA%, ICA/CCA, Flow Volume, HR
Clinical Analysis Packages	Abdomen, Obstetric, Gynecology, Cardiology, Vascular, Urology, Small parts, ORTH, Pediatrics
SYSTEM SETUP	
By using system setup, users could Customize	hospital information, language, screen type, screen controller, measurement package, comment/ body mark, exam mode, hotkey functions, DICOM setting, Net setting
System information	• function setting • hardware function • Video & VGA setting
User Define Functions	By user-define function, users could customize user-define preset, including • Applications name, Presets name, User defined name • Applications exam type • Imaging parameters
Multi-language Display Interface	• German • English • Other languages
Inputs & Outputs	1xAC Power In, 1xAC power Out, 1xPower Button, 6xUSB Port, 1xEthernet, 1xRemote Control, 1xS-Video Out, 1xDVI, 1xVGA Out, 1xVideo Out, 2xFootswitch Port, 1xGround pole
GENERAL INFORMATION	
Dimensions	7 x 517 x 1283mm (L x W x H)
weight	main unit (approx.): 50kg (probes not included)
Power	AC100-240V
Power frequency	50/60 Hz
Power consumption	600 VA
Operating conditions	• Ambient temperature: 10°C to 40°C • Relative humidity: 30% to 75% (no condensation) • Atmospheric pressure: 700 hPa to 1060 hPa
Storage and transport conditions	• Ambient temperature: -5°C to 40°C • Relative humidity: ≤80% (no condensation) • Atmospheric pressure: 700 hPa to 1060 hPa


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