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Title	ProPet X/E Series Technical Specifications

SonoScape

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Specifications for ProPet X/E Series

Veterinary Portable Digital Color Doppler Ultrasound System

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- Software: English, Simplified Chinese, German, French, Spanish, Russian, Italian, and Polish
- Keyboard Input: English, Simplified Chinese, Latin, French, Polish and Russian
- User manual: English and Simplified Chinese
- Quick Start Guide: English and Simplified Chinese

2 Physical Specifications

2.1 Dimension and Weight

- Width：approx. 390mm
- Depth：approx. 380mm
- Height：（1）Excluding foot pad, 49mm；（2）Including foot pad, 55.5mm；
- Weight：approx. 5.2Kg((including battery)

2.2 Monitor

- Specifications：15.6-inch medical high resolution LCD monitor
- Resolution: 1920 × 1080
- Brightness: Adjustable
- Up/down angle: 0° to 180°

2.3 Trolley

- Width: approx. 596mm；
- Depth: approx. 568mm；
- Height: approx. 930mm (the workbench is at the lowest position with an angle of 15° and a coupling gel heater);
- Up/down range: 830mm-1150mm (taking the handle as the benchmark);
- Workbench angle adjustment range: 15°-30°;
- Weight: approx.41Kg(including battery)
- Foot brake: 5 inches;

2.4 Speaker

- Hi-Fi Speaker

2.5 Probe Port and Probe Holder

- Normal probe port: 4 ports
- Probe holder：6

    ProPet EQ：3 normal holders，2 coupling gel holders, 1 probe holder

    Others：3 normal holders，2 coupling gel holders, 2 probe holder
- Gel warmer: 1
- Cable holder: 1
- Cable hanger: 2

2.6 Power

- Rated voltage：100-240V~
- Frequency: 50/60HZ
- Maximum input power: 200VA
- Maximum input power of the trolley: 450VA
- Built-in battery: Power supply time of full battery ≥1.5h
- Battery health monitoring: Available
- Power saving mode: Available

2.7 Working Environment

- Temperature: 0℃～40℃
- relative humidity: ≤90%
- Atmosphere pressure: 70kPa～106kPa

- System noise：≤55dB

2.8 Storage and Transportation Environment

- Temperature: -20° C to 55° C
- Relative humidity: 20%~95%
- Atmospheric pressure: 70kPa - 106kPa

3   Human-Computer Interaction

3.1 Control Panel

- User-oriented design
- Backlight design: Panel key
- Multiple user-defined keys
- Trackball sensitivity: adjustable

3.2 Touch Screen

- Specifications: 12.3-inch LCD touch screen
- Resolution: 1920×720
- Viewing angle: 160° (horizontal), 160° (vertical)
- Brightness: adjustable
- Available to touch with latex gloves
- User-defined position layout: parameters
- Anti-glare and anti-fingerprints
- Gesture operations: available
- TGC: 8 levels slider controls
- Number/character keyboard
- User-defined combination key: available

3.3 System Bootup and Shutdown

- System bootup time: approx. ≤ 25s
- System shutdown time: approx. ≤ 15s

3.4 Annotation

- All exam applications include Abdomen, REPRO, Cardiac，Superficial，Musculoskeletal,Brain, Vascular, Urology, Eye, Thorax
- Text annotation and arrow annotation
- Edition and arrangement of annotation words
- Annotation customization (add and delete)
- Front size of text annotation and arrow size: adjustable
- Initial position: user-defined (tap SetHome and Home buttons on the touch screen)

3.5 Body Mark

- All exam applications include Abdomen, REPRO, Cardiac，Superficial，Musculoskeletal,Brain, Vascular, Urology, Eye, Thorax
- Body marks: ≥ 154, selectable
- Body mark size: Large, Medium, Small, adjustable
- Body mark menu: user-defined
- User-defined body mark menu (display sequence and customized display): available

3.6 Monitor Information

- Manufacturer logo
- Hospital name
- Product model

SonoScape

- System date and time
- Probe and exam item
- MI and TI (TIB/TIC/TIS)
- Operator
- Probe icon
- Animal ID, name, date of birth, gender ,age and animal icons
- Exam type icon
- Tissue temperature display (specified probe)
- Depth scale and focus position
- Image parameters
- Thumbnail image
- Clipboard
- Screensaver
- System theme color adjustment: available
- Gesture configuration: available

4 Image Parameter

4.1 Overview

- Grayscale: 256 levels
- Transducer element: up to 256
- Audio: 0 - 100, 51 levels adjustable

4.2 B Mode

- Gain: 0 - 100 adjustable
- Scan depth: ≥ 40cm
- Compound imaging: off, 1, 2, 3, 4; 5 levels adjustable (e.g. C1-6A)
- HQ Scan: off, 1, 2, 3, 4
- Frequency: 5 bands adjustable (fundamental wave: 5 bands; harmonic wave: 5 bands)
- Chroma: off, 1-15, 16 levels adjustable
- μ Scan: off, 1-7, 8 levels adjustable (e.g. C1-6A)

- Line density: Low, Med, High, 3 levels adjustable
- Persistence: Off, Min, Low, Med, High, Max (e.g. C1-6A)
- C-Field+
- Focus number: 12 (e.g. C1-6A, different focus number for different probes)
- Focus position: adjustable
- Dynamic range: 20 - 320 (e.g. C1-6A)
- Gray map: 1 - 16, 16 levels adjustable
- Power%: 1 - 100, 100 levels adjustable
- NSI: Off, 1, 2, 3, 4, 5 adjustable
- Tissue acoustic index: common tissue, fat, liquidity tissue, parenchyma, 4 levels adjustable
- TGC: 8 levels slider controls
- LGC: 8 bands (left/right side gain compensation)
- Image inversion: left/right, up/down, rotation
- Sector width: adjustable
- B steer: -15°, -10°, -5°, 0°, 5°, 10°, 15°, 7 levels adjustable (linear array probe)
- Widescan: off, 1, 2
- Auto optimization: Gain and GSC
- Auto SSC: On, Off, 2 levels
- Maximum frame rate:：802f/s (S1-5, Cardiac：Focus number is 1，minimum depth and sector width, low line density, harmonic imaging is off)

4.3 M Mode

- Gain: 0 - 100 adjustable
- Chroma: off, 1 - 15, 16 levels adjustable
- Display format: H1:1, V1:3, V1:2, V1:1, V2:1, Full Screen
- Scan speed: Min, Slow, Med, Fast, Max, 5 levels adjustable (e.g. S1-5)
- Gray Invert: On/Off
- Power%: 1 - 100, 100 levels adjustable
- Color M: CFM, TDI

4.4 Anatomical M Mode

- Three sample lines
- Display 3 sample lines simultaneously
- Angle and position of sample lines: adjustable
- Linear anatomical M-mode and curved anatomical M-mode

4.5 CFM Mode

- Gain: 0 - 100 adjustable
- Power%: 1 - 100, 100 levels adjustable
- Priority: 1-16 adjustable
- Size and position of color ROI: adjustable
- Image inversion: up/down, left/right
- Bright Flow: Off, 1, 2, 3
- Invert: On/Off
- Frequency: 3 levels adjustable
- Wall filter: Min, Low, Med, High, Max, 5 levels adjustable (e.g. 12L-B)
- PRF: 0.08-7.17kHz adjustable (e.g. C1-6A) (different adjustment range for diagnosis item of different probes)

- Line density: Low, Med, High, 3 levels adjustable
- Color map: 1-7 adjustable
- Baseline: ± 8, 17 levels adjustable (different adjustable levels for different diagnosis items)
- Persistence: Off, Low, Med, High, Max, 5 levels adjustable (e.g. C1-6A)
- ROI steer: 9 levels adjustable (linear array probes)
- ROI color: adjustable
- Auto optimization: ROI position and steer angle
- Dual live
- Maximum frame rate：：161f/s (S1-5, Cardiac, B+CFM mode: Minimum ROI in the initial wave area, minimum depth and sector width, sensitivity is 1, minimum line density, Scale is adjusted upward)

4.6 PDI/DPDI Mode

- Gain: 0 - 100 adjustable
- Power%: 1 - 100, 100 levels adjustable
- Priority: 1-16 adjustable
- Persistence: Off, Low, Med, High, Max, 5 levels adjustable (e.g. C1-6A)
- Color map: 1 - 11, 11 levels adjustable
- Image inversion: up/down, left/right
- Bright Flow: Off, 1, 2, 3
- Wall filter: Min, Low, Med, High, Max, 5 levels adjustable (e.g. 12L-B)

4.7 SR Flow

- Gain: 0 - 100 adjustable
- Power%: 1 - 100, 100levels adjustable
- Wall filter: Min, Low, Med, High, Max, 5 levels adjustable (e.g. 12L-B)
- Size and position of color ROI: adjustable
- Image inversion: up/down, left/right
- Bright Flow: Off, 1, 2, 3
- Frequency: 3 levels adjustable
- PRF: 0.2-5kHz adjustable (e.g. C1-6A) (different adjustment range for diagnosis item of different probes)
- Line density: Low, Med, High, 3 levels adjustable
- Color map: 1-5, 5 levels adjustable
- Persistence: Off, Low, Med, High, Max, 5 levels adjustable (e.g. C1-6A)
- ROI steer: 9 levels adjustable (linear array probes)
- ROI color: adjustable
- Auto optimization: ROI position and steer angle
- Dual live
- Maximum frame rate: 164f/s (S1-5, Cardiac)

4.8 Micro F

- Gain: 0 - 100 adjustable
- Power%: 1 - 100, 100 levels adjustable
- Size and position of color ROI: adjustable
- Image inversion: up/down, left/right
- Bright Flow: Off, 1, 2, 3
- Frequency: 3 levels adjustable
- PRF: 0.2-5kHz adjustable (e.g. C1-6A) (different adjustment range for diagnosis item of different probes)
- Line density: Low, Med, High, 3 levels adjustable
- Color map: 1-5, 5 levels adjustable
- Persistence: Off, Low, Med, High, Max, 5 levels adjustable (e.g. C1-6A)
- ROI steer: 9 levels adjustable (linear array probes)
- ROI color: adjustable
- Dual live
- Wall filter: Min, Low, Med, High, Max, 5 levels adjustable (e.g. 12L-B)
- Maximum frame rate: 164f/s (S1-5, Cardiac)

4.9 FHR

- Gain: 0 - 100 adjustable
- Power%: 1 - 100, 100levels adjustable
- Size and position of color ROI: adjustable
- Image inversion: up/down, left/right
- Bright Flow: Off, 1, 2, 3
- Frequency: 3 levels adjustable
- PRF: 0.2-5kHz adjustable (e.g. C1-6A) (different adjustment range for diagnosis item of different probes)
- Line density: Low, Med, High, 3 levels adjustable

- Color map: 1-5, 5 levels adjustable
- Persistence: Off, Low, Med, High, Max, 5 levels adjustable (e.g. C1-6A)
- ROI color: adjustable
- Dual live
- Wall filter: Min, Low, Med, High, Max, 5 levels adjustable (e.g. 12L-B)
- Maximum frame rate: 241f/s

4.10 PW Mode

- Gain: 0 - 100 adjustable
- Display format: H1:1, V1:3, V1:2, V1:1, V2:1, Full Screen, 6 levels selectable
- Simultaneous mode
- PW sample volume: 0.3 - 30mm (e.g. C1-6A)
- PW sample position: adjustable
- Invert: On/Off
- Quick angle correction: -60°, 0°, 60°
- Angle correction range: -88° to 88°, 2° each step
- Steer angle: 9 levels adjustable (linear array probe)
- Auto trace: achievable in real-time mode and frozen mode
- Baseline: ± 8, 17 levels adjustable (different adjustable levels for different diagnosis items)
- Frequency: 3 levels adjustable
- Wall filter: Min, Low, Med, High, Max, 5 levels adjustable
- PRF: 0.64-6.4kHz adjustable (e.g. C1-6A) (different adjustment

range for diagnosis item of different probes)
- HPRF
- Velocity range: 0-896cm/s (e.g. C1-6A, PRF=15.63kHz, θ =60°, frequency=2.5MHz, the lowest baseline)
- Scan speed: Min, Slow, Med, Fast, Max, 5 levels adjustable
- Chroma: Off, 1 - 5, 6 levels adjustable
- Dynamic range: 1-10, 10 levels adjustable (e.g. C1-6A)
- Auto Optimization: Baseline and PRF

4.11 CW Mode

- Gain: 0 - 100 adjustable
- Display format: H1:1, V1:3, V1:2, V1:1, V2:1, Full Screen, 6 levels selectable
- CW sample position: adjustable
- Invert: On/Off
- Angle correction range: -88° to 88°, 2° each step
- Baseline: 17 levels adjustable
- Wall filter: Min, Low, Med, High, Max, 5 levels adjustable
- PRF: 2-60kHz (e.g. S1-5)
- Velocity range: 0-46.2m/s (e.g. S1-5, PRF=60kHz, θ =60°, frequency=2.0MHz, the lowest baseline)
- Scan speed: Min, Slow, Med, Fast, Max, 5 levels adjustable
- Chroma: Off, 1 - 5, 6 levels adjustable
- Dynamic range: 1-10, 10 levels adjustable

4.12 TDI Mode

- Tissue speed imaging and tissue power imaging
- Power%: 1 - 100, 100 levels adjustable
- Priority: 1-16 adjustable
- Persistence: Off, Low, Med, High, Max, 5 levels adjustable (e.g. S1-5)
- Color map: 1-5, 5 levels adjustable
- Image inversion: up, down, left, right
- Invert: On/Off
- Wall filter: Min, Low, Med, High, Max, 5 levels adjustable

4.13 TDI+PW Mode

- PRF: 0.76-12.80kHz (S1-5)
- Velocity range: 0 - 1088cm/s (S1-5, PRF=7.54kHz, θ=60°, the lowest baseline, SVD=0.1cm)

4.14 CFM+PW Mode

- PRF: 0.76-7.38kHz (S1-5)
- Velocity range: 0 - 512cm/s (S1-5, PRF=7.38kHz, θ=60°, the lowest baseline, SVD=0.1cm)

4.15 CFM+M Mode

- Gain: 0 - 100 adjustable
- Chroma: Off, 1-15; 16 levels adjustable
- Display format: H1:1, V1:3, V1:2, V1:1, V2:1, Full Screen, 6 levels selectable
- Scan speed: Min, Slow, Med, Fast, Max, 5 levels adjustable (e.g. S1-5)
- Power%: 1-100; 100 levels adjustable

4.16 TDI+M Mode

- Gain: 0 - 100 adjustable
- Chroma: Off, 1-15; 16 levels adjustable
- Display format: H1:1, V1:3, V1:2, V1:1, V2:1, Full Screen, 6 levels selectable

- Scan speed: Min, Slow, Med, Fast, Max, 5 levels adjustable (e.g. S1-5)
- Power%: 1-100; 100 levels adjustable

5 Advanced Features

5.1 Freehand 3D

- Scan method: sector scan, parallel scan
- Display format: Single display, Dual-split display (A|3D, B|3D, C|3D), Three-split display, Quad-split display
- Slice: A, B, C, 3D
- Focus: The adjustment range is related to depth.
- Rotate the image along X, Y or Z axis
- Move the image up and down, left and right, and back and forth
- Direction: top, bottom, left, right, front, back
- 3D orientation: 0°, 90°, 180°, 270°
- Reset: default settings, sweep angle, viewing angle, direction, zoom ratio
- Render mode: Surface, Grad. Light, Skeleton, Skeleton Depth, S-Depth, Transp. Min, X-Ray, S-Live, S-Live Silhouette, S-Live Contour,
- Invert: Invert the 3D image rendering effect
- Assistant Display: Show three-dimensional diagram
- 2D GSC: adjust the grayscale map of slice, 1-16 adjustable, 1 each step
- 3D GSC: adjust the grayscale map of 3D image, 1-19 adjustable, 1 each step
- 3D Chroma: Off, 1-14 adjustable, 1 each step
- B Chroma: Off, 1-15, 1 each step
- 2D μScan: Off, 1-5
- 3D μScan: Off, 1-5
- Depth color: available in Grad. Light render mode, 0-9 adjustable, 1 each step
- Color level position: available in Grad. Light render mode, 0-100 adjustable, 1 each step
- Tint Curve: available in Grad. Light render mode, 0-100 adjustable, 1 each step

- Contrast Position: 10-200 adjustable, 1 each step
- Shadow intensity: available in part of render modes, 0-100 adjustable, 2 each step
- Transp. Gray: available in part of render modes, 5-200 adjustable, 5 each step
- B Silhouette: available in S-Live Silhouette and S-Live Studio modes, 5-200 adjustable, 5 each step
- Boundary depth: available in S-Live Contour mode, 0-100 adjustable, 2 each step
- Boundary sharpening: available in S-Live Contour mode, 0-100 adjustable, 2 each step
- Boundary threshold: available in S-Live Contour mode, 0-100 adjustable, 2 each step
- Auto rotation: 0°, 15°, 30°, 45°, 60°
- 3D Frame: On/Off
- Scale: On/Off
- Fixed ROI: On/Off
- Adjust light: On/Off (S-Live, etc.)
- Trackball: ROI position and size adjustment, light adjustment, etc.
- Threshold: 0 - 100, 1 each step
- Contrast: 0 - 100, 1 each step
- Transparency: 0 - 100, 1 each step
- Brightness: 0 - 100, 1 each step
- Smoothness: 0 - 30, 1 each step
- Light position.: 0 - 9, 1 each step
- Scan distance in parallel scan mode: 10-200, 10 each step
- Sweep angle in sector scan mode: 10°- 90°, 2° each step
- Edit: trace, box, eraser
- Cut: full cut, defined cut
- Display (C-Plane): AB, AC, BC, ABC
- Niche: change combination direction, select slice, display layout, adjust 2D μScan, Chroma, grayscale map, rotate Niche along X, Y, Z axis, and reset Niche
- M-Slice display: 1×2, 2×2, 3×3, 3×4, 4×4, 5×5
- Slice distance: 0.5 - 10.0 adjustable, 0.1 each step
- Slice number: 3 - 29 adjustable, 2 each step
- Slice number (left side): set the slice

number on the left of Line 0, affecting total number of slices
- Slice number (right side): set the slice number on the right of Line 0, affecting total number of slices
- Single slice magnification

5.2 FreeVue

- Line type: Line, Curve, Poly Line, Trace
- Line number: One, Two, Three
- View mode: Actual View, Project View
- Viewing direction: Left, right, top, bottom
- ICON switch: control the display of image marks
- BOX switch: control the display of image border
- LINE switch: image auxiliary line display
- View Rot.: control the rotation of icon
- Supports Contrast 3D/4D

5.3 Elasto

- Support Probes:18L-A、12L-B、L741V、C1-6A
- Display format: dual-split display (left/right), single display, dual-split display (up/down)
- Switch between single display and dual-split display
- Map display: independent adjustment of left and right map
- Depth adjustment
- B image parameters: adjustable
- TGC: adjustable
- User-defined preset: available
- Strain map left: Off, 1 - 7, 1 each step
- Strain map right: Off, 1 - 7, 1 each step
- Frequency: 5 bands adjustable (fundamental wave: 5 bands; harmonic wave: 5 bands)
- Image optimization: Pen/Gen/Res
- Contrast: 0.00 - 2.00, 0.04 each step
- Transparency: 0 - 100, 2 each step
- Persistence: Off, Min, Low, Med, High, Max, 6 levels adjustable
- Quality Image
- Partial Elimination

• Frame Screen

5.4 ATI

• Support Probe:C1-6A
• Application: ABD
• Color map: Off, 1-4 adjustable
• Color bar value modification: 3 (max), 0 (min)
• Measure the attenuation value in frozen mode, display attenuation mean, credibility (red: below 70%, yellow: 70%-90%, white: above 90%) and confidence value (R2)
• Display histogram in frozen mode, and adjust display format, mean, maximum value and minimum value
• Display format: H1/2, V1/2, O1/1
• Save image to report
• Transparency: 0.0-1.0 adjustable, 0.1 each step
• Image optimization (opt): Gen/Pen, available in real-time mode

5.5 Contrast Imaging(CEUS)

• Support Probes:18L-A、12L-B
• Real-time retrospective storage and prospective storage
• Display format: single (B), dual (2B)
• Image inversion: up/down, left/right
• Biopsy and biopsy calibration: available
• Two timers
• Flash power%: 1 - 100, 1 each step
• Flash time: 0.1s - 4.0s
• Dynamic range: 20 - 320, 10 each step, 31 levels adjustable (C1-6A)
• Power: 1% - 100%, 100 levels adjustable (different for different probes, e.g. C1-6A: 2%-11%)
• Gray map: 1 - 16, 16 levels adjustable
• Chroma: Off, 1 - 15, 16 levels adjustable
• μScan: Off, 1 - 7, 8 levels adjustable
• Persistence: Off, Min, Low, Med, High, Max, 6 levels adjustable
• Sector width: adjustable
• TIC quantitative analysis
  -- Time Intensity Curve (TIC) analysis
  -- ROI outline: Trace/Ellipse

-- Trace: can be deleted and cleared
-- Parameter display: available
-- Max. ROI: 10
-- Four compound curves: Bolus WIWO, General, Wash In, Wash Out
-- Compound curve: can be hidden
-- Cine speed: 7 levels adjustable
• Contrast agent switch: SonoVue, Sonazoid
• MFI
• MFI Time
• Mix Mode
• Contrast HFR

5.6 Panoramic

• B mode panoramic imaging
• Color panoramic imaging (CFM/PDI/DPDI), only available on linear array probe
• Rotation: -180° to 180°
• Zoom: 8.0 times
• Maximum available length: 1000mm
• Chroma: Off, 1-15
• Gray map: 1 - 16
• Image scale: On/Off
• Full view
• Image cropping
• Image reconstruction

5.7 Biopsy Guide Function

• Biopsy line angle: adjustable
• Biopsy line dot size: adjustable
• Biopsy depth: adjustable
• Biopsy line angle calibration
• Biopsy line offset calibration
• Biopsy line calibration parameter storage and load default
• User-defined biopsy line angle
• Biopsy area: available
• Midline display and biopsy angle adjustment: available
• Edit and calibrate: available

5.8 Vis-Needle

• Steer angle:
  -- Left: 20° to 50°, 10° each step, 4 levels adjustable

-- Right: -20° to -50°, 10° each step, 4 levels adjustable

5.9 Widescan Imaging

● Widescan: Off, 1, 2 (linear array probe, phased array probe and convex array probe)

5.10 Zoom

● Zoom ratio: 0.7 - 20.0
● Scr-Zoom (one key full screen zoom)
● Supports ROI zoom (front-end) and ROI zoom (back-end)

5.11 SonoHelp

● Pets ABD, cardiac and URO examination: available
● Create section and customize image and cine: available

5.12 SonoAssistant

● Available in ABD, URO, MSK and Cardiac applications
● Provides reference sections of male, female, tumor, cyst, and effusion in Abdomen and Urology exam
● Provides reference sections of MR, TR, AR, PR, ISD, ASD, MS, AS, PS in Cardiac exam
● Ultrasound image display of the standard plane for reference
● Displays unfinished scanning sections in the exam
● Supports imaging mode: B/B+Color/B+PW/
  B+Color+PW/B+CW/B+Color+CW/B+M/
  B+Color+M
● Mutual switch between Sono Assistant and Sono-Help: available

5.13 SonoFast

● AFAST、TFast、Vet BLUE: available
● Flow change: available
● Supports the display of scanned part name on the monitor
● Supports binding to the scanned part when saving the image or cine

● Supports the entry to overview image, switch between the overview image and preview screen and saving by pressing the key
● Supports the modification on the examination findings of the scanned part in overview image
● Supports the change of scan part in sequence
● All application modes: available
● All imaging modes: available
● User-defined key configuration: available

5.14 SonoExam

● Automatic retrieval: available
● Retrieved operations: mode switching, measurement, annotation, body mark, and general operations (such as freezing, storage, and report viewing)
● Tap Next Step on the touch screen to automatically perform the next operation.

5.15 SonoPage

● Page setting associated with the diagnosis item
● Measurement, body mark and annotation can be added to the page
● User-defined key setting
● Multiple pages setting and adding
● SonoPage setting, import and export
● Perform a measurement, add a body mark, and add an annotation from SonoPage screen

5.16 G-MQA

● Section type: A2C/A3C/A4C/PLAX/ PSAX A/PSAX M/PSAX B
● Trace point: editable
● Motion direction:
  -- Long axis: Longitudinal, Radial
  -- Short axis: Radial, Rotation, Circumference
● Multiple curve types: Strain, Strain Rate, Velocity, Displacement, Volume
● Bull's eye display
● Peak time display
● Cardiac valve open-close time indication

- Time measurement
- Save result to report
- Store and modify the cine result

5.17 R-MQA

- User-defined trace
- Able to delete the trace line
- Add ROI after analysis
- Max. ROI: 20
- Four-curve types: Strain, Strain Rate, Velocity, Displacement
- Peak time display
- Cardiac valve open-close time indication
- Time measurement

5.18 Customized Preset

- Customizable preset: user-defined parameters for different probes and exam types
- Preset order: adjustable
- Import or export presets
- Delete presets
- Overwrite presets

5.19 Stress Echo

- Protocol: user-defined or selectable
- Acquisition of cardiac sections in different stress levels in terms of selected protocol for advanced and flexible stress echo examination
- Available on phased array probe, under Cardiac preset
- Provides exercise and pharmacological protocol templates
- Continuous acquisition of sections in the template
- Acquired sections selectable for the exam
- Supports comparison among the acquired sections
- Wall motion scoring (bull's eye) and reporting

5.20 S-CV (meas.)

- Supports automatic measurement in frozen mode or during review
- Supports automatic measurement

of apical four-chamber view (A4C) at the end diastole and end systole
- Supports the automatic measurement of Parasternal Long-axis view (PLAX) at the end diastole, middle systole, and end systole
- Supports adjustment of measurement trace line
- Supports saving the measurement results to the report
- Supports the storage of the measurement results

5.21 S-CV

- Supports the automatic identification of locating points MV in PW mode
- Supports automatic locating point identification and measurement in real-time mode
- Supports feature point marking in real-time mode
- Supports feature point marking in real-time mode
- Supports the adjustment of the sample volume position and size in real-time mode
- Supports the re-identification of the locating point in real-time mode
- Supports the adjustment of spectral cardiac cycle
- Supports the editing of spectral trace line
- Supports the adjustment of trace line sensitivity
- Supports the savage of the results to the report

5.22 Auto VTI

- Supports the automatic identification of locating point LVOT in PW mode
- Supports the characteristic spectrum and output spectral measurement value in real-time mode
- Supports the adjustment of the sample volume position and size in real-time mode
- Supports the re-identification of the locating point LVOT in real-time mode
- Supports the adjustment of spectral cardiac cycle
- Supports the editing of spectral trace line
- Supports the adjustment of trace line sensitivity
- Supports the display of trending graph
- Supports the manual entry of left ventricular outflow tract diameter
- Supports the savage of the results to the report

5.23 Auto IVC

- Supports the automatic identification of locating point IVC in M mode
- Supports the editing of sample line angle and position
- Supports the real-time trace of superior and inferior wall of inferior vena cava
- Supports the selection of autonomous respiration or mechanical ventilation mode

- Supports the adjustment of respiratory cycle
- Supports the re-identification of locating point IVC in real-time mode
- Supports the display of trending graph in real-time mode
- Supports the selection and display of scan results.
- Supports the savage of the results to the report

5.24 Auto B lines

- Supports the curved array, linear array and phased array probe
- Supports the entry to auto B line mode in B mode
- Available in real-time mode or during frozen or review mode
- Supports the different display of normal B line and fusion B line
- Supports the output of the following measurement results: Number of B lines, B line score, diffuse rate, and distance between the adjacent B lines
- Supports the measurement of B line in 6/8/12 lung zone
- Supports the display of scanned part name on the monitor
- Supports the selection of the examination findings of the scanned part and the synchronous display on the monitor and touch screen
- Supports binding to the scanned part when saving the image or cine
- Supports the entry to the report according to the B line result of the scanned part
- Supports the entry to overview image, switch between the overview image and preview screen and saving by pressing the key
- Supports the modification on the examination findings of the scanned part in overview image

5.25 SonoDrop

- Support system:Android
- On-site wireless image transmission
- An interactive app that lets you transfer clinical image from SonoScape ultrasound system to a smart device
- Communication should be established by scanning the encrypted QR code.
- Transfer images or clips from system to mobile terminal through WiFi

5.26 SonoSynch.

- Synchronize main screen images, real-time camera images, audios remotely
- Screen sharing
- Supports the synchronization for 2 to 4 users

5.27 SonoService

- Able to configure the software function of internet of things through aconfig
- Able to configure the reporting cycle of device information acquisition in engineering mode
- Obtain online device SN, model, software and hardware versions, board information, area information, logs, configuration, hardware self-test report, pre-warning events, using frequency of modules
- Web end can send request to obtain device fault information.
- The operating status of the device is regularly reported to the cloud after statistic and calculation. The statistical information of the operating status uploaded by the device can be displayed at Wed end.
- To ensure network security, data transmission process is encrypted.
- Problem locating and tracing: bug start, tracing, locating, resolving, testing, recording, saving, query, statistics and report

5.28 Face Recognition

- Enter face information: available
- Camera status inspection: available

- Store face information and account information: available
- Login through face
- Face ID import and export: available

5.29 Voice Control

- Voice control: available
- Customize voice commands
- Voice control: On/Off
- audio annotation

5.30 Auto Wake Up

- Probe auto wakeup while change the postion or direction of the probe
- Accelerometer: On/Off
- Accelerometer probe: Low, Med, High, 3 levels available

5.31 Compare

- Real-time image compare
- History image compare
- Comparison of B/C, contrast, or elastic images (Including Free Fusion)
- Storage and review when comparing images

5.32 QR Code (System Settings)

- QR data structure analysis and configuration
- QR data input

5.33 Show Gallery

- Play the image, video and file
- Play mode and play interval settings
- Supported formats:
    --Video: MP4, AVI, WMV
    -- Image: JPEG, BMP, TIFF
    -- File: PPT, PDF
- Mobile storage device import
- Sequencing of name, type and size: available

5.34 Synchronous Measurement

- Supports the synchronous display on touch screen and monitor
- Supports the synchronous measurement on touch screen and monitor

6   Measurement/Analysis and Report

6.1 Measurement Settings

- Cross cursor size: Small, Medium, Large
- line ID display: On/Off
- Keep line and result after zoom: On/Off
- Measure line size: Small, Medium, Large
- Keep result window: On/Off
- Cine keep measure line: On/Off
- Result font size: Large, Medium, Small
- Result font color: White, Yellow
- Distance dash line display: On/Off
- Velocity cross line display: On/Off
- Ellipse cross line display: On/Off
- Volume flow compensation with TAmax: 0.5, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00
- Result position: Top Right, Top Left, Bottom Left and Bottom Right adjustable in 2D or M+D mode
- Result font pellucidity: 0%, 10%, 20%, 30%, 40%, 50%
- Line color: Yellow, Purple, Blue
- Pleural line color: Blue, Yellow
- Pleural line thickness: On/Off
- Display B line distance result: On/Off
- Left/right orientation: On/Off
- Measuring magnifier: On/Off
- Screen measurement menu: On/Off
- M mode cross line display: On/Off
- Copy result: On/Off

6.2 Basic   Measurement Package

- Abdominal measurement package
- Reproduction measurement package
- Cardiac measurement package

- Superficial measurement package
- Musculoskeletal measurement package
- Brain measurement package
- Vascular measurement package
- Urology measurement package
- Eye measurement package
- Thorax measurement package

6.3 Report

- Application-specific measurement report
  - ✓ Stress echo test and bull's eye
  - ✓ MQA
  - ✓ WMS trend graph
- Measurement values: editable
- Report template: editable
- Measurement results process method: selectable
- Image Insertion
- Report preview
- Report compare
- Capture all pages of report
- Comment edit: available
- DICOM send: available
- Report logo (bmp/png/jpg): replaceable
- Font size and color settings
- Background color settings
- Display item settings
- Export format: PDF, TXT, RTF, HTML
- PC export

6.4 Auto EF

- Semi auto trace of left endocardium
- Trace result: adjustable
- Supported sections: A2C/A4C

6.5 Auto Pleural Line

- Pleural line thickness automatic measurement: available
- Supports the output of the pleural line thickness measurement results of 12 lung zone

6.6 Auto Bladder

- Automatically measure bladder volume on a section
- Measurement result: editable

6.7 Auto Tract

- ROI position and range: adjustable
- Application: Intestinal wall thickness
Remark:Only bidding is supported.

7 Storage and Data Management

7.1 Storage

- 1T HDD
- 256G SSD
- 2D cine storage time setting:
  - ✓ Retrospective storage: 1 - 20s
  - ✓ Prospective storage: 1 - 600s
  - ✓ Freeze storage: 1 - 120s
- 4D cine storage time setting:
  - ✓ Retrospective storage: 1 - 50s
  - ✓ Prospective storage: 1 - 600s
- Directly store to USB drive
- Prospective storage for contrast imaging

7.2 Sono Transfer

- Upload reports, images and cines to PC: available
- Available formats:
  image: JPG、BMP、TIFF
  cine: WMV、MP4、AVI
  report: PDF、TXT、HTML

7.3 Data Management

- Image, video and report sharing service (Samba)
- Export data to USB drive or DVD
- Export format:
  - ✓ System format
  - ✓ PC format
    Image format: BMP, JPG, TIF
    Cine format: AVI, WMV, MP4
    Report format: PDF, TXT, HTML, RTF
  - ✓ 3D print data format: STL, OBJ, PLY, 3MF, XYZ
  - ✓ RF data
  - ✓ DVR data
  - ✓ DICOM format
  - ✓ DICOMDIR format

- Clipboard: thumbnail display, delete, export
- Create exam, activate exam, end exam
- Query/Retrieve service
- Review current exam and history exam
- Post-processing and post-measurement
- Backstage storage: quick switch of DICOM cine

7.4 Cine Review

- Cine review: frame by frame manual play and auto play with adjustable speed
- One keystroke reviews the first frame or last frame
- Auto play: can be activated/inactivated by using trackball
- Manual play: play the previous frame image or next frame image by using trackball
- Play the cine frame by frame
- Loop playback
- Storage and loop playback of partial frames of cine

8 Connectivity

8.1 I/O Port

- USB port：
  - ✓ 3*USB3.0 ports
- 2 video input/output ports
  - ✓ S-VIDEO OUT
  - ✓ HDMI OUT
- 1 cable network port
- 1 physiological signal input ECG port
- 1 Type C port

8.2 Video Output Settings

- VIDEO/S-VIDEO (TV-NTSC, TV-PAL)
- HDMI/DVI (4:3)
- HDMI/DVI (16:9)

8.3 Network Connection

- Local network
- ✓ Local network: On/Off
- ✓ DHCP or static IP
- ✓ Static IP: IP, netmask and default gateway settings

- ✓ MAC address check
- ✓ Advance: Speed (10M, 100M, Unknown) and Duplex (Semi Duplex, Full Duplex) . Enable and disable auto negotiation mode (only valid for this time).
- ✓ Speed and duplex search and settings
- ✓ Ping IP Address
- Wireless network
- ✓ Wireless network: On/Off
- ✓ Authentication method: Open, WEP, WPA/WPA2-PSK, WPA-EAP
- ✓ DHCP or static IP
- ✓ Static IP: IP, netmask and default gateway settings
- ✓ MAC address check
- ✓ WIFI connection, disconnection, refresh, advanced configuration and network adding
- ✓ Ultrasound hotspot
- ✓ Switch between ultrasound hotspot and WIFI

8.4 DICOM 3.0

- DICOM storage
- DICOM storage commitment
- DICOM Worklist
- DICOM MPPS
- DICOM print
- DICOM Q/R list

8.5 HL7

- Receive animal data through HL7 protocol

9 Probe

NOTE: For the following probes that support widescan, bilateral extension is also supported.

9.1 Convex Array Probe

- C1-6A
  - ✓ Application:
    Large Canine (Abdomen, Urology, Reproduction, Thorax)
    Medium Canine (Abdomen, Urology, Reproduction, Thorax)
    Feline (Abdomen, Urology,

Reproduction, Thorax)
Equine (Abdomen, Reproduction, Thorax)
Bovine (Abdomen, Reproduction, Thorax)
Ovine (Abdomen, Reproduction, Thorax)
  - ✓ Frequency range: 1.0-8.0MHz
  - ✓ Central frequency: 3.2MHz
  - ✓ Curvature radius: 55mm
  - ✓ Transducer element: 192
  - ✓ Field of view: 70°
  - ✓ Widescan (unilateral, 2 levels adjustable): 10°/20°
  - ✓ Depth: ≥30cm
  - ✓ Acoustic lens: 72mm×15mm
  - ✓ Biopsy bracket: NGBC1-6A, 14°/19°/25°/36°, sterilizable
- C613
  - ✓ Application:
    Large Canine (Cardiac, Abdomen, Urology, Reproduction, Thorax, Brain, Vascular)
    Medium Canine (Cardiac, Abdomen, Urology, Reproduction, Thorax, Brain, Vascular)
    Small Canine (Cardiac, Abdomen, Urology, Reproduction, Thorax, Brain, Vascular)
    Feline (Cardiac, Abdomen, Urology, Reproduction, Thorax, Brain, Vascular)
    Equine (Abdomen, Reproduction, Brain, Vascular, Thorax)
    Bovine (Abdomen, Reproduction, Thorax)
    Ovine (Abdomen, Reproduction, Thorax)
    Lab animals (Cardiac, Abdomen, Thorax)
    Exotic animals (Cardiac, Abdomen, Urology, Reproduction, Thorax)
  - ✓ Frequency range: 4.0-13.0MHz
  - ✓ Central frequency: 6.0MHz
  - ✓ Curvature radius: 14mm

- ✓ Transducer element: 128
- ✓ Field of view: 90°
- ✓ Widescan (unilateral, 2 levels adjustable): 10.5°/20.5°
- ✓ Depth: ≥12cm
- ✓ Acoustic lens: 30mm×10mm
- ✓ Biopsy bracket: NGBC613, 12°/18°/30°, sterilizable

9.2 Linear Array Probe

● 18L-A

- ✓ Application:

  Large Canine (Superficial, MSK, Eye, Abdomen, Vascular, Thorax)

  Medium Canine (Superficial, MSK, Eye, Abdomen, Vascular, Thorax)

  Small Canine (Superficial, MSK, Eye, Abdomen, Vascular, Thorax)

  Feline (Superficial, MSK, Eye, Abdomen, Vascular, Thorax)

  Equine (Superficial, MSK, Eye, Tendon, Back)

  Bovine (Superficial, MSK, Eye, Tendon, Back)

  Ovine (Superficial, MSK, Eye, Tendon, Back)

  Lab animals (Cardiac, Brain, Abdomen)

  Exotic animals (Superficial, MSK, Eye, Abdomen)

- ✓ Frequency range: 8.0-25.0MHz
- ✓ Central frequency: 10.0 MHz
- ✓ Transducer element: 192
- ✓ Width of view: 29mm
- ✓ Depth: ≥7cm
- ✓ B steer: 0°/±5°/±10°/±15°, 7 levels
- ✓ ROI steer/sample line steer: 0°/±5°/±10°/±15°/±20° (some diagnosis modes: 0°/±12°/±20°)
- ✓ Widescan: 10°/20° (unilateral, 2 levels adjustable)
- ✓ Acoustic lens: 40mm×5mm
- ✓ Biopsy bracket: NGB18L-A, 40°/50°/60°, sterilizable

● 12L-B

- ✓ Application:

  Large Canine (Superficial, MSK, Eye, Abdomen, Vascular, Thorax)

  Medium Canine (Superficial, MSK, Eye, Abdomen, Vascular, Thorax)

  Small Canine (Superficial, MSK, Eye, Abdomen, Vascular, Thorax)

  Feline (Superficial, MSK, Eye, Abdomen, Vascular, Thorax)

  Equine (Superficial, MSK, Eye, Tendon, Back)

  Bovine (Superficial, MSK, Eye, Tendon, Back)

  Ovine (Superficial, MSK, Eye, Tendon, Back)

  Lab animals (Cardiac, Brain, Abdomen)

  Exotic animals (Superficial, MSK, Eye, Abdomen)

- ✓ Frequency range: 3.0-17.0MHz
- ✓ Central frequency: 8.0 MHz
- ✓ Transducer element: 192
- ✓ Width of view: 38mm
- ✓ Depth: ≥9cm
- ✓ B steer: 0°/±5°/±10°/±15°, 7 levels
- ✓ ROI steer/sample line steer: 0°/±5°/±10°/±15°/±20°, 9 levels
- ✓ Widescan: unilateral, 2 levels: 10°/20°
- ✓ Acoustic lens: 42mm×7mm
- ✓ Biopsy bracket: NGB12L-B, 39°/48°/60°, sterilizable

9.3 Phased Array Probe

● S1-5

- ✓ Application:

  Large Canine (Cardiac, Abdomen, Thorax, Brain)

  Medium Canine (Cardiac, Abdomen, Thorax, Brain)

  Feline (Cardiac, Abdomen, Thorax, Brain)

  Equine (Cardiac, Abdomen, Thorax)

  Bovine (Cardiac, Abdomen, Thorax)

  Ovine (Cardiac, Abdomen, Thorax)

  Lab animals (Cardiac, Abdomen,

Thorax)

✓ Frequency range: 1.0-7.0MHz

✓ Central frequency: 2.7MHz

✓ Transducer element: 80

✓ Field of view: 90°

✓ Depth: ≥30cm

✓ Widescan: Supports extension, 2 levels adjustable, 100° max

✓ Acoustic lens: 25mm×16mm

✓ Biopsy bracket: NGBS1-5, 11.5°/18°/28°, sterilizable

● 7P-A

✓ Application:

Large Canine (Cardiac, Abdomen, Thorax, Brain)

Medium Canine (Cardiac, Abdomen, Thorax, Brain)

Feline (Cardiac, Abdomen, Thorax, Brain)

Equine (Cardiac, Abdomen, Thorax)

Bovine (Cardiac, Abdomen, Thorax)

Ovine (Cardiac, Abdomen, Thorax)

Lab animals (Cardiac, Thorax)

Exotic animals (Cardiac, Abdomen, Thorax)

✓ Frequency range: 2.0-9.0MHz

✓ Central frequency: 4.5MHz

✓ Transducer element: 96

✓ Field of view: 90°

✓ Depth: ≥10cm

✓ Widescan: Supports extension, 2 levels adjustable, 100° max

✓ Acoustic lens: 21mm×12mm

✓ Biopsy bracket: NGB7P-A, 13°/18.5°/24.5°, sterilizable

● 8P1

✓ Application:

Medium Canine (Cardiac, Abdomen, Thorax, Brain)

Small Canine (Cardiac, Abdomen, Thorax, Brain)

Feline (Cardiac, Abdomen, Thorax, Brain)

Equine (Cardiac, Abdomen, Thorax)

Bovine (Cardiac, Abdomen, Thorax)

Ovine (Cardiac, Abdomen, Thorax)

Lab animals (Cardiac, Thorax)

Exotic animals (Cardiac, Abdomen, Thorax)

✓ Frequency range: 4.0-12.0MHz

✓ Central frequency: 6.5MHz

✓ Transducer element: 96

✓ Field of view: 90°

✓ Depth: ≥9cm

✓ Widescan: Supports extension, 2 levels adjustable, 100° max

✓ Acoustic lens: 14mm×10mm

9.4 Endocavitary Probe

●   L741V

✓ Applications:

Equine (Reproduction)

Bovine (Reproduction)

Ovine (Reproduction)

Exotic animals (Reproduction)

✓ Frequency range: 5.0-10.0MHz

✓ Central frequency: 7.5MHz

✓ Transducer element: 128

✓ Width of view: 46mm

✓ Depth: ≥10cm

✓ B steer: 0°, ±8°, 3 levels adjustable

✓ ROI steer/sample line steer: 0°/±8°/±12°/ ±16°

✓ Widescan (unilateral, 2 levels adjustable): 10°

✓ Acoustic lens: 66mm×10mm

10 Peripheral Devices and Accessories

10.1 Printer

● Printer types

✓ Color ink jet printer

✓ B/W video printer

✓ Color video printer

● Print types

✓ Network print

✓ USB print

✓ Windows print

- Add printer
- Available printer models:
  - ✓ Sony UP-X898MD
  - ✓ HP Color Laster Jet Pro M252n
  - ✓ Cannon CP1300
  - ✓ HP Color LaserJet CP1515n
  - ✓ EPSON L130
  - ✓ HP Ink Tank Wireless 411
  - ✓ HP Ink Tank 319

10.2 Foot Switch

- 2 pedals
- Foot switch: available
- User-defined short-cut keys

10.3 USB Bar Code Scanner

- Bar code input

10.4 DVD R/W Drive

- Export animal data to DVD
- Import animal data from DVD
- Supported DVD formats: DVD-R/RW, DVD+R/RW
- Disk produced by SONY are recommended, and the capacity should be not less than 4.7GB.

11 Safety and Certification

- Certification: ISO 9001, ISO 13485
- Comply with:
  - ✓ GB 9706.1
  - ✓ B 9706.237
  - ✓ GB 10152
  - ✓ YY/T 0767
  - ✓ GB 9706.227
  - ✓ YY/T 0593
  - ✓ EN 60601-1 and IEC 60601-1
  - ✓ EN 60601-1-2 and IEC 60601-1-2
  - ✓ EN 60601-1-6 and IEC 60601-1-6
  - ✓ EN 60601-2-37 and IEC 60601-2-37
  - ✓ EN 62304 and IEC 62304
  - ✓ EN 62366-1 and IEC 62366-1
- CE announcement: This system complies with the requirements of Regulation (EU) 2017/745. The code (0197) following CE logo is the number of the notified body by EU, which proves the system meets the requirements of the Regulation.

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