

minisono

Product Specification

V1.0



General Specifications

minisono L3-12 Physical Specification

- Width: 62.5 mm
- Depth: 150 mm
- Height: 25.5 mm
- Weight: Approx. < 200 g

minisono C1-6 Physical Specification

- Width: 62.5 mm
- Depth: 157 mm
- Height: 25 mm
- Weight: Approx. < 200 g

Tablet PC Specification (Recommended)

- Windows 10
- Resolution: 1,736 x 1824
- Chipset m3
- Integrated SSD
- Thermal printer storage
- Built-in stereo speaker
- System boot-up: 90 sec

Control Panel (Touch UI)

- Alphanumeric keyboard
- Ergonomic key layout
- 8 TGC control levers

System Standard Feature

Architecture

- Digital Beam-Forming
- Multi-beam
- Flexcan™
- MicroFit™
- Optimal Imaging Suite™
- OS: Windows 10

Transducer Type

- Convex
- Linear

Application

- Abdomen
- Spine
- Gynecology
- Musculoskeletal
- Anesthesia
- Small Parts
- FAST
- Vascular

Imaging Mode

- 2D (B)
- Color Flow (CF)
- Pulse Wave Doppler (PWD)
- Motion (M)

Complex Mode

- Duplex: B+B, B+PW, B+CF, B+M
- Triplex: B+CF+PWD

Scanning Parameters

- System frequency range: 1 ~ 20 MHz
- Processing channel: 655,360
- ADC: 10 bits
- Displayed imaging depth: 0 ~ 30cm
- Max. Frame rate (Probe dependent)
 - 2D: 30 FPS
 - Color: 25 FPS
- Dynamic range: Max. 192dB
- Gray scale: 256 levels
- Focus
 - Focal number: Max.1
- CF
 - 300 Hz – 3.3 KHz
- PW
 - 300 Hz – 4.1 KHz

Imaging Presentation

- Single, dual
- Duplex image format
 - 1:1

Display and User Interface

Display Annotation

- Patient ID: Up to 64 characters
- Patient name: First, last and middle
- Gender, age and birth date
- Transducer name
- Institution / hospital name: up to 32 characters
- Date format: 3 types
 - YYYY/MM/DD
 - MM/DD/YYYY
 - DD/MM/YYYY
- Time format: 2 types
 - 12 hours
 - 24 hours
- Acoustic power
 - Mechanical index (MI)
 - Thermal index (TI): TIS, TIB, TIC
- Transducer name
- Preset

- Transducer orientation
- Depth
- Focus
- TGC line
- Frequency
- Frame rate
- Power
- Mode name
- 2D mode
 - Gain
 - Dynamic range
 - Gray scale bar
 - Persistence
- Doppler mode
 - Wall filter
 - PRF
 - Sample volume position, size and angle
 - Velocity or frequency scale
 - Time
- Color flow mode
 - Wall filter
 - ROI box
 - PRF
 - Velocity or frequency scale
 - Color scale bar
- M mode
 - Gain
 - Dynamic range
 - Time
- Arrow
- Indicator
- Text
 - Size: Small, medium, large
- Body pattern (Marker)
- Thumbnail
- Stored image info
- Cine gauge
- Measurement result

Live Mode Display

- 2D
 - Angle steer (Probe dependent): 7 steps (-9 ~ 9°)
 - Dynamic range: 30 ~ 192dB
 - Frequency: 3 Steps
 - SRI: 0 ~ 5
 - Gray map: 0 ~ 14
 - Gain: 0 ~ 50
 - Harmonic
 - Persistence: 4 steps
 - Power: 1 ~ 100%
 - Reject: 10 steps
 - Spatial compound: 3 steps

- M
 - Dynamic range: 30 ~ 150dB
 - Gray map: 0 ~ 13
 - Gain: 0 ~ 50
 - Reject: 10 steps
 - Power: 1 ~ 100%
 - Sweep speed: 6 steps
- PWD
 - Angle: -89° ~ 89°
 - Angle steer (Probe dependent): 7 steps (-15 ~ 15°)
 - Auto angle
 - Base line: 16 steps
 - Frequency: 3 steps
 - Gain: 0 ~ 50
 - Power: 1 ~ 100%
 - Reject: 10 steps
 - Scale (PRF): 0.3 ~ 4.1 KHz
 - SV size: 0.7 ~ 20 mm
 - Sweep speed: 5 steps
 - Wall filter: 9 steps
- CF/PD
 - Angle steer (Probe dependent): 7 steps (-15 ~ 25°)
 - Color map: 9 maps
 - Frequency: 3 steps
 - Gain: 0 ~ 50
 - Power: 1 ~ 100%
 - Scale (PRF): 0.3 ~ 3.3 KHz

Post Processing (on frozen)

- 2D
 - Full SRI
 - TGC
 - Gain
 - Dynamic range
 - Gray map
 - Reject
- PWD
 - Angle correction
 - Auto Calc.
 - Gray map

Technology and Feature

Imaging Technology

- Filtered tissue harmonic imaging (FTHI)
- Full speckle reduction imaging (Full SRI)
- Spatial Compounding Imaging
- Frequency Compounding Imaging (FCI)
- Xspeed™
- Beam steer

Features

- Full SRI
- Xpeed™
- Spatial Compounding
- Frequency Compounding Imaging (FCI)
- Filtered Tissue Harmonic Imaging (FTHI)
- DICOM

Transducer

C1-6

- Convex array
- Frequency: 1.0 - 6.0 MHz
- Field of view: 78°
- Elements: 128
- Radius of curvature: 38.6 mm
- Footprint: 5.9 X 15.8 mm
- Application: Abdomen, Spine, FAST

L3-12

- Linear array
- Frequency: 3.0 - 12.0 MHz
- Field of view: 38.4 mm
- Elements: 128
- Footprint: 44.8 X 7.8 mm
- Application: Musculoskeletal, Anesthesia, Small Parts, FAST, Vascular

Data Management

Image Archive

- E-View™
- Image store: Up to System Storage (Ex: 216,000 images available in 385 GB)
- Image format
 - BMP, JPEG, DICOM, WMV
- Export / Backup / Restore
- Network storage

Cine

- Cine memory: 500 MB, 1,500 frames, Max 5min
- Prospective and retrospective
- Cine review, save
- Frame move

Measurement and Calculation

Basic (Caliper)

- 2D
 - Distance

- Area circumference
- %Stenosis
- Volume
- Angle
- A/B ratio
- Disk Volume
- Histogram

• M

- Time
- Slope
- %Stenosis
- HR
- A/B Ratio
- Distance

• Doppler

- Velocity
- Time
- PI
- Trace
- Semi Auto trace
- Acceleration
- A/B Ratio
- VTI
- RI
- AC/DC
- PHT

Abdomen Measurement

• 2D

- AO
- Renal L
- Renal Vol
- Renal
- %Stenosis
- Volume
- A/B Ratio

• M

- HR

• Doppler

- AO
- Renal A
- IVC
- Hepatic A
- Hepatic V
- Mid HV
- MPV
- PV
- Splenic A
- Splenic V
- SMA
- SMV
- IMA
- Iliac A

- Iliac V
- Ves
- Renal V
- HR

Obstetrics Measurement_OB

- 2D
 - Fetal Biometry
 - Early Gestation
 - Fetal Long Bones
 - Fetal Cranium
 - Fetal Others
 - AFI
 - CRAR
 - Maternal Others
 - LL
 - RL
 - Scapular
 - SC
 - FB
 - OOD
 - HA
 - AA
 - Umb. A Diam.
 - APTD-TTD
 - AxT
 - CTAR
 - Ovary
- M
 - Generic
 - FHR
- Doppler
 - Aorta
 - Carotid
 - MCA
 - Umbilical A
 - Uterine A
 - SMA
 - Celiac A
 - Ductus Ven
 - IVC

Obstetrics Measurement_Fetal Echo

- 2D
 - 4 Chamber view
 - Aortic Arch
 - LVOT
 - Outflow tract
 - RVOT
 - Thorax
 - Venous
 - Heart
 - Teichholz
 - CT
 - Arteries
 - Veins
- M
 - 4 Chamber view
 - Outflow tract
 - FHR

- Heart
- Teichholz
- Doppler
 - Tricuspid Valve
 - Mitral Valve
 - Main Pulmonary Artery
 - Aorta
 - Ductus Art.
 - Umbilical V
 - Ductus Ven.
 - Pulmonary Valve
 - Aortic Valve
 - FHR
 - LVOT
 - RVOT
 - Pulmonary Vein
 - Valves
 - Ventricles
 - Arteries
 - Vein

Gynecology Measurement

- 2D
 - Endo Thick.
 - Cervix L
 - Follicle
 - Uterus
 - Ovary
 - Bladder
 - Uterus Vol
 - Ovary Vol
 - Bladder Vol
 - Fibroid
 - Pelvic Floor
 - Uterine A
 - Ovarian A
- M
 - Ovarian
 - Uterine
 - FHR
- Doppler
 - Aorta
 - Umbilical A
 - Placenta
 - Des. aorta
 - Uterine A
 - Ovarian A
 - MCA
 - Vessel
 - FHR
 - HR

Vascular

- 2D
 - CCA
 - ICA
 - Bulb

- ECA
- Vert. A
- Subclav A
- Ophthalmic A
- Supratroch A
- Brachial A
- Radial A
- Ulnar A
- CFA
- SFA
- PFA
- PopA
- PTA
- ATA
- Pero A
- Arcuate A Sup
- Arcuate A Med
- Arcuate A Inf
- Renal A
- Kidney
- Celiac A
- SMA
- IMA
- CIA
- EIA
- AbdAo
- Hepatic A
- Splenic A
- Portal Vein
- M
 - HR
- Doppler
 - CCA
 - IC
 - ECA
 - Bulb
 - Vert A
 - Subclav A
 - Ophthalmic A
 - Supratroch A
 - Brachial A
 - Radial A
 - Ulnar A
 - CFA
 - SFA
 - PFA
 - PopA
 - PTA
 - ATA
 - Pero A
 - Arcuate A Sup
 - Arcuate A Med
 - Arcuate A Inf

- Renal A
- Kidney
- Celiac A
- SMA
- IMA
- AbdAo
- Hepatic A
- Splenic A
- Portal Vein
- CIA
- EIA
- MCA
- ACA
- PCA P1
- PCA P2
- AComA
- PComA
- BA
- Ves

MSK Measurement

- 2D
 - Volume
 - Hip (BA)
 - Hip (AB)
- M
 - HR
- Doppler
 - Ves
 - HR

Small Parts Measurement

- 2D
 - Thyroid Vol.
 - Testicle Vol.
 - Thyroid
 - Testicle
- M
 - HR
- Doppler
 - Ves
 - HR

Urology Measurement

- 2D
 - Renal L
 - Renal
 - Bladder
 - Testicle
 - Prostate
 - Residual
 - Renal Vol.
 - Bladder Vol.

- Testicle Vol.
- Prostate Vol.

- M
 - HR
- Doppler
 - Vessel
 - HR

Pediatrics Measurement

- 2D
 - Aorta
 - Renal L
 - Renal
 - Renal Vol
 - Hip
- M
 - HR
- Doppler
 - Aorta
 - Renal A
 - CHA
 - IVC
 - Hepatic V
 - Mid HV
 - MPV
 - Portal V
 - Splenic A
 - Splenic V
 - SMA
 - SMV
 - IMA
 - Iliac A
 - Iliac V
 - Vessel
 - HR

Connectivity

DICOM

- DICOM 3.0
- Image storage
- Multi-frame image storage
- Secondary image capture storage
- Structured report
- Grayscale print management
- Color print management
- Storage commitment push model
- Modality performed procedure step
- Worklist
- Verification
- Media storage: USB media, DVD, CD-R

Thermal printer

- BW
 - SONYUP-D23MD
 - SonyUP-D897
 - SonyUP-D898MD/X898MD
 - MITSUBISHICP30D/DW(USB)
- Color
 - SonyUP-D25MD
 - MITSUBISHIP95D
 - CanonSELPHYCP800

Safety and Compliance

- MDD 93/42/EEC
- EN ISO 10993-1:2009 (ISO 10993-1:2009)
- EN ISO 10993-10:2013 (ISO 10993-10:2010)
- EN ISO 10993-5:2009 (ISO 10993-5:2009)
- EN ISO 13485:2016 (ISO 13485:2016)
- EN ISO 14155:2011+AC:2011 (ISO 14155:2011)
- EN ISO 14971:2012 (ISO 14971:2007)
- EN ISO 15223-1:2016 (ISO 15223-1:2016)
- EN 1041:2008+A1:2013
- EN 55011:2016+A1:2017 (CISPR 11:2015/AMD1:2016)
- EN 60601-1:2006+A1:2013 (IEC 60601-1:2005/AMD1:2012)
- EN 60601-1-2:2015 (IEC 60601-1-2:2014)
- EN 60601-1-6:2010+A1:2015 (IEC 60601-1-6:2010/AMD1:2013)
- EN 60601-2-37:2008+A11:2011+A1:2015 (IEC 60601-2-37:2007/AMD1:2015)
- EN 61000-4-11:2004 (IEC 61000-4-11:2004)
- EN 61000-4-2:2009 (IEC 61000-4-2:2008)
- EN 61000-4-3:2006+A1:2008+A2:2010 (IEC 61000-4-3:2006/AMD2:2010)
- EN 61000-4-4:2012 (IEC 61000-4-4:2012)
- EN 61000-4-5:2014 (IEC 61000-4-5:2014)
- EN 61000-4-6:2014 (IEC 61000-4-6:2013)
- EN 61000-4-8:2010 (IEC 61000-4-8:2009)
- EN 62304:2006+A1:2015 (IEC 62304:2006/AMD1:2015)
- EN 62366-1:2015 (IEC 62366-1:2015)
- MEDDEV 2.12/2 Rev.2
- MEDDEV 2.7.1 Rev.4
- NEMA UD2:2004 (R2009)
- Medical Devices Regulations (SOR/98-282)
- 의료기기법, 의료기기법 시행령, 의료기기법 시행규칙
- CE
- WEEE
- RoHS

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