minisono

Product Specification

V1.0 Rev03

ALPINION MEDICAL SYSTEMS

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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 Spec(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 beamforming
- Multi-beam
- FleXcan™
- MicroFit™
- Optimal Imaging Suite™
- OS: Windows 10

Transducer Type

- Convex
- Linear

Application

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

Imaging Mode

- 2D (B)
- Color flow (CF)
- Pulse wave Doppler (PW)
- Motion (M)
- Power Doppler (PD)

Complex Mode

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

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.2
- Zoom
  - Write zoom : Max. 89.1x (probe dependent)
  - Read zoom : Max. 89.1x (probe dependent)
- 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
- Acoustic power
  - Mechanical index (MI)
- 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)
- Xpeed™
- 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
  - HR- Volume Flow

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

MSK Measurement

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

Small Parts

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

Urology

- 2D
  - Renal L
  - Renal Vol.
  - Bladder Vol.
  - Testicle Vol.
  - Prostate Vol.
  - Renal
  - Bladder
  - Testicle
  - Prostate
  - Residual
- M
  - HR
- Doppler
  - Ves
  - 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

OB

- 2D
  - AC
  - HC
  - FL
  - BPD
  - CLAV
  - CRL
  - GS
  - MSD
  - YS
  - BOD
  - Humerus
  - Radius
  - Ulna
  - Tibia
  - Fibula
  - SL
  - NB
  - EL
  - LL
  - RL
  - Scapular
  - SC
  - FB
  - Foot
  - FK
  - OFD
  - OOD
  - HA
  - MAD
  - AD
  - AA
  - FTA
  - TAD
  - TTD
  - TC
  - APTD
  - TCD
  - APAD
  - CTAR
  - AxT
  - APTD-TTD
  - CM
  - UmbAD
  - UmbVD
  - NT
  - OV Vol.
  - AFI
  - EFW
  - OV
  - Heart
  - Teichholz
  - CT
  - Arteries
  - Veins
- M
  - HR
  - Heart
  - Teichholz
- Doppler
  - AO
  - Umbilical A
  - Placenta
  - Des.Aorta
  - Uterine A
  - MCA
  - Ovarian A
  - Ves
  - DV
  - Valves
  - Ventricles
  - Arteries
  - Veins
  - HR

GYN

- 2D
  - Cervix
  - Endo
  - OV Vol.

- UT Vol.
- Bladder Vol.
- OV
- UT
- Follicle
- Bladder

• M
- HR

• Doppler
- AO
- Umbilical A
- Placenta
- Des.Aorta
- Uterine A
- Mid Cerebral A
- Ovarian A
- Ves
- 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

- EN 60601-1:2006+A11:2011+A1:2013 (IEC 60601-1:2005 +A1:2012)
- EN 60601-1-2:2007 (IEC 60601-1-2:2007)
- EN 60601-1-4:1996+A1:1999 (IEC 60601-1-4:1996+A1 :1999)
- EN 60601-1-6:2010 (IEC 60601-1-6:2010+A1:2013)
- EN 60601-2-37: 2008+A11:2011 (IEC 60601-2-37:2007)
- EN 55022:2010, Class B (CISPR 22:2008, modified)
- EN 55011:2009+A1:2010, Group 1, Class B
- EN 61000-4-2:2009 (IEC 61000-4-2:2008)
- EN 61000-4-3:2006+A1:2008+A2:2010 (IEC 61000-4 -3:2006+A1:2007+A2:2010)
- EN 61000-4-4:2004+A1:2010 (IEC 61000-4-4:2004+ A1:2010)
- EN 61000-4-5:2006 (IEC 61000-4-5:2005)
- EN 61000-4-6:2009 (IEC 61000-4-6:2008)
- EN 61000-4-8:2010 (IEC 61000-4-8:2009)
- EN 61000-4-11:2004 (IEC 61000-4-11:2004)
- EN 61000-3-2:2006+A1:2009+A2:2009 (IEC 61000-3-2 :2005+A1:2009+A2:2009)
- EN 61000-3-3:2008 (IEC 61000-3-3:2008)
- EN 62304:2006 (IEC 62304:2006)
- EN 62366:2008 (IEC 62366:2014)
- EN ISO 14971:2012 (ISO 14971:2007)
- EN ISO 10993-1:2009 (ISO 10993-1:2009)
- EN ISO 10993-5:2009 (ISO 10993-5:2009)
- EN ISO 10993-10:2013 (ISO 10993-10:2010)
- AIUM/NEMA UD 2:2004 (R2009)
- AIUM/NEMA UD 3:2004 (R2009)
- MDD 93/42/EEC
- CANADA [Regulation] SOR-98-282
- CE
- WEEE
- RoHS

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