



Sierra NMUS1™ is a high-performance ultrasound accessory to the Sierra Summit®. Eight-simultaneous beam formers with variable transmit frequencies deliver advanced image quality and resolution for neuromuscular, musculoskeletal, and needle guidance imaging. Sierra NMUS1 efficiently integrates ultrasonic imaging and quantification into an electrodiagnostic workflow.

GENERAL PERFORMANCE

Display/Operating Modes

- B-Mode
- Color Flow Doppler
- M Mode
- Q Mode (Tissue Quantification)
- PW Doppler Mode (Spectral Doppler)

Image Enhancement & Processing

- Spatial Compounding: 5 Levels
- Edge Enhancement: 5 Levels
- Basic Speckle Reduction: 5 Levels
- Advanced Speckle Reduction: 5 Levels
- Harmonic Scanning
- Trapezoid View
- Algo8 Clarity Enhancement

Gray Scales

- 256

Image Magnification

- Zoom from 1:1 to 30:1 (real-time and frozen)

Cine Review

- 10 seconds

Focus

- 16 levels to adjust
- 1-4 focal points

B-MODE IMAGING

B Mode Measurement

- Area, Angle, Circumference, Distance, Depth, Length, Volume, Width

Ultrasound Frequency Support

- 2-20 MHz

Spatial Compounding

- 5 levels

Frame Rate

- Up to 100+ FPS. Variable depending on probe, depth and number of acoustic lines per frame.

Image Resolution

- 256x256 to at least 1280x1024 with proper interpolation and scanline conversion. Resolution auto-adjusts based on monitor resolution and size of window.

TGC

- 8 TGC controls at equal depth settings with 40 dB range per setting

Brightness

- -10 to +10

Contrast

- -10 to +10

Overall Gain

- User can change overall gain through 40 dB range

DOPPLER IMAGING

Doppler Box Settings

- The system allows the setting of the Doppler ROI with 0.5 cm of the edge boundaries of the B-mode image within an accuracy of 2.5 mm of requested position

Doppler PRF

- 10 steps in range of 250 Hz to 10 kHz dependent on depth of FOV

Wall Filter

- Settable from 1/20th, 1/40th, 1/80th and 1/160th of PRF

Q MODE IMAGING

Acquisition

- Dual stream B Mode + Fixed RF Stream

Measurements

- EI (RF Echo Intensity with standard attenuation compensation)
- Elc (RF Echo Intensity compensated for signal attenuation based on tissue analysis) and Signal Attenuation
- ROI Depth
- ROI Area

ROI

- Ellipse
- Box
- Trace

Results Compensation

- Depth
- Focus
- Frequency
- TGC
- Signal Attenuation

M MODE IMAGING

Sweep Speed

- 1 to 8 seconds / Sweep or Scroll

Resolution

- 64 to 8192

PW MODE IMAGING

Measurements

- None

Sweep

- 128, 196, 256, 368, 512

Resolution

- 128, 256, 512

PROBE SUPPORT

L14-4 LINEAR ULTRASOUND TRANSDUCER

Frequency

- Standard Range: 4 to 14 MHz
- Max: 16 MHz
- Central: 9 MHz

Elements / Pitch

- 192 Piezo Electric / 0.2 mm

Aperture

- 38.4 mm

Voltage Rating (at connector)

- 80 V

Operating Temperature

- 10 to 40 °C

HL18-4 LINEAR HOCKEY STICK ULTRASOUND TRANSDUCER

Frequency

- Standard Range: 4-18 MHz
- Max: 20 MHz
- Central: 10 MHz

Elements / Pitch

- 128 Piezo Electric / 0.2 mm

Aperture

- 25.6 mm

Voltage Rating (at connector)

- 60 V

Operating Temperature

- 10 to 40 °C

C5-2 CURVILINEAR ULTRASOUND TRANSDUCER

Frequency

- Standard Range: 2-5 MHz
- Max: 6 MHz
- Central: 3 MHz

Elements / Pitch

- 160 Piezo Electric / 0.38 mm

FOV (Field of View)

- 70 degrees

Voltage Rating (at connector)

- 80 V

Operating Temp

- 10 to 40 °C

MECHANICAL

Form Factor

- Base for Laptop or PC

Dimensions

- 14.0" x 9.3" x 1.2" (356 x 236 x 30 mm)

POWER

Input

- 12 Vdc

Power Consumption

- 40 W

Mains Power Supply

- Mean Well GSM90B12-P1M
- Input: 100 -240 Vac, 50/60 Hz
- Output: 12 V, 6.67 A, 80 W max

PC REQUIREMENTS

CPU

- I7 2.8 GHz
- 4 Core
- 8 Thread

GPU

- NVIDIA RTX 2000 or comparable

Operating System

- 64-bit Windows® 10 Pro
- Windows 11 Pro

RAM

- 16 GB DDR4

Hard Drive

- 256 GB SSD +

Interface

- Thunderbolt 3 or 4

Network Connectivity

- 100/1000T
- 802.3
- 802.11ac

Monitor Resolution

- 1920x1080 or 1920x1200

OPERATING ENVIRONMENT SPECIFICATIONS

Temperature

- 0 to 30 °C

Humidity

- 0 to 90% relative humidity

Atmospheric Pressure

- Sea level to 5000 ft (1524 m)

Surface Temperature

- Max housing temperature is 38 °C

STANDARDS

Quality Standards

- FDA QSR 21 CFR Part 820
- ISO 9001
- ISO 13485
- ISO 14971

Design Standards

- IEC 60601-1
- IEC 60601-1-2
- IEC 60601-2-37



Supported Probes (pictured left to right): HL18-4 Hockey Stick Probe, L14-4 Linear Probe, C5-2 Curvilinear Probe.

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