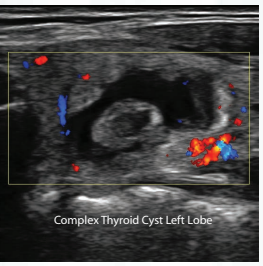
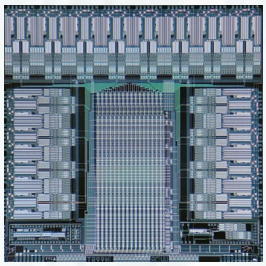
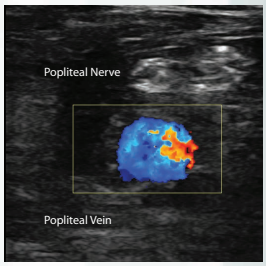
uSmart® 3200T NexGen

SuperHarmonic™ Imaging Power

Specifications







The New Look of Ultrasound.

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uSmart® 3200T NexGen Ultrasound System Specifications

Overview

Clinical Applications

- Abdominal
- Anesthesia
- Arterial
- Breast
- Cardiac
- Carotid
- Critical Care
- FAST-Emergency Medicine
- MSK
- Neonatal Hip
- OB/GYN
- Ophthalmic
- Thyroid
- Trans Cranial Doppler
- Vascular Access
- Venous

Imaging Modes

- 2D (B-Mode)
- M-Mode
- Color Doppler
- Pulsed Wave Doppler
- Power Doppler
- Directional Power Doppler
- Continuous Wave Doppler
- Tissue Doppler
- Tissue Harmonic Imaging with *SuperHarmonics*™

Imaging Features

- Enhanced Needle Visualization (ENV)
- TeraVision™ II
- OmniBeam™
- Dynamic Depth Resolution (DDR™)
- TeraZoom™
- Trapezoid
- Triplex/Duplex (Simultaneous/Non-Simultaneous)
- Split Screen
- Full Screen
- Auto Optimization
- 2D Beam Steering
- Application-Specific Presets
- Post Processing
- TeraScape™
- Intima-Media Thickness (IMT)

Ergonomics

- 5 Point Multi-Touch Capacitive Touch Screen
- Backlit High-Resolution AHVA LCD
- Under 5 lb
  - Ultra-Portable
- Intuitive User-Interface

Workflow

- Smart Gestures™
- Retrospective and Prospective Capture
- Cine Loop Trim Capability
- 2D Volume Measurement Tools
- Configurable Report Builder
- Store, Print, Media Export
- JPEG/BMP/AVI/PDF Media Export
- DICOM Modality Worklist
- DICOM Storage
- DICOM SR

Revolutionary Architecture & Performance

System Configuration

- 256 GB Solid State Drive (SSD)
- Processor: 2.2 GHz Dual-Core, Intel® Core™ i7
- 8 GB DDR3L SDRAM
- 11.6" Backlit High-Resolution LCD with Advanced Hyper Viewing Angle (AHVA) (Anti-Glare Available)
- Removable Lithium Polymer Battery
- Imaging Channels: 256
- Dynamic Range: 200 dB
- Video Output: 1366 x 768
- Tablet: Built-In 5 Megapixel Camera, Speakers, Digital Microphone, 2 USB 3.0 Ports, Ethernet Port, SD Card Slot, Micro HDMI, Headphone Port, DC Input

Benchmarks

- Cold Boot-Up Time: < 45 Seconds
- > 2-Hour Battery Life While Scanning
- Transducer Select Time (Typical): < 2 Seconds
- Data Access Time: << 1 Second

Open Windows® Architecture

- Windows® 10 Operating System
- Easy Software Updates Through uConnect® Remote Capabilities
- Send Images Remotely
- Remote Training
- Full PC Capabilities
- Installation of Third-Party Applications
- Windows® NTFS EFS Encryption Compatible

Physical System Specifications

System Dimensions:

- Height: 9"/230 mm
- Width: 13"/327 mm
- Depth: 1.25"/36 mm
- System Weight: 4.85 lb/2.23 kg

Cart Design and Ergonomics

- Multi-Probe Connector Kit (Optional)
- 3 Transducer Holders
- 1 Active Probe Holder
- Thin, Sleek Body Style
- Mobile Design
- 4-Wheel Steering for Excellent Mobility
- 4 Locking Wheels
- Shelf with Handle and Removable Gel Holder
- On-Cart Storage Basket
- Transducer Connector Holders with Cable Management Hooks
- Weight 37 lb/16.78 kg

Advanced User Interface Features

- Smart Gestures™ for Intuitive Operation
- uConnect® Remote Capability
- Capacitive Multi-Touch Screen
- Stylus-Friendly, Non-Scratch Coating Gorilla® Glass
- Touch-Sensitive On-Screen Keyboard
- Auto-Optimization Control
- Fingertip Controlled Measurements
- Post-Acquisition Processing
- Interactive Body Markers
- Adjustable Color Doppler Box Sizes
- Custom Configurations in Setup Menu
- Soft Key Image Control Panel

Transducers & Clinical Applications

16L5 Smart Mark™ Linear Array

- Applications: Breast, Lung, Musculoskeletal, Nerve Block, Vascular Access
- Number of Elements: 192
- Bandwidth: 16 – 5 MHz
- Transducer Footprint: 49.9 mm x 22.8 mm
- Aperture: 38mm
- Ultra-lightweight: .34 kg
- 2.1 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection
- Biopsy Kit Available

uSmart® 3200T NexGen Ultrasound System Specifications

15L4 Smart Mark™ Linear Array

- Applications: Arterial, Breast, Carotid, Dialysis Access, Lung, MSK, Neonatal Hip, Nerve Block, Ophthalmic, Thyroid, Vascular Access, Venous
- Number of Elements: 128
- Bandwidth: 15 – 4 MHz
- Transducer Footprint: 59 mm x 25 mm
- Aperture: 38mm
- Ultra-lightweight: .33 kg
- Ergonomic Handle
- 1.9 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection

12L5 Linear Array

- Applications: Arterial, Breast, Carotid, Dialysis Access, Lung, MSK, Neonatal Hip, Nerve Block, Opthalmic, Testes, Thyroid, Vascular Access, Venous
- Number of Elements: 128
- Bandwidth: 12 – 5 MHz
- Transducer Footprint: 52.2 mm x 18.7 mm
- Aperture: 38 mm
- Ultra-Lightweight: .3 kg
- Ergonomic Handle
- 2.1 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection
- Biopsy Kit Available

8L2 Smart Mark™ Linear Array

- Applications: Arterial, Carotid, Vascular Access, Venous
- Number of Elements: 128
- Bandwidth: 10 – 2 MHz
- Transducer Footprint: 52.2 mm x 17 mm
- Aperture: 38.4 mm
- Ultra-Lightweight: .3 kg
- 2.2 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection

4V2 Phased Array

- Applications: Cardiac, FAST, TCD
- Number of Elements: 64
- Bandwidth: 4 – 2 MHz
- Transducer Footprint: 34 mm x 24.5 mm
- Field of View: 90°
- Ultra-Lightweight: .28 kg
- Ergonomic Handle
- 2.1 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection

8V3 Phased Array

- Applications: Cardiac
- Number of Elements: 96
- Bandwidth: 9 – 3 MHz
- Transducer Footprint: 34 mm x 24.5 mm
- Field of View: 75°
- Ultra-Lightweight: .25 kg
- 1.9 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection

5C2 Curved Array

- Applications: Abdominal, FAST, Fetal Cardiac, MSK, OB/GYN, Renal, Thyroid, Visceral
- Number of Elements: 128
- Bandwidth: 5 – 2 MHz
- Transducer Footprint : 76 mm x 27 mm
- Field of View: 60°
- Ultra-Lightweight: .34 kg
- Ergonomic Handle
- 2.1 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection
- Biopsy Kit Available

9MC3 Curved Array

- Applications: Abdominal, Cardiac, Neonatal Head, Small Parts, Thyroid, Vascular Access
- Number of Elements: 80
- Bandwidth: 9 – 3 MHz
- Transducer Footprint: 34 mm x 26 mm
- Field of View: 97°
- Ultra-Lightweight: >.5 kg
- 2.1 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection

8EC4 Endocavity

- Applications: OB/GYN, Prostate
- Number of Elements: 128
- Bandwidth: 8 – 4 MHz
- Transducer Footprint: 22 mm x 18.5 mm
- Field of View: 150°
- Ultra-Lightweight: .34 kg
- Ergonomic Handle
- 2.1 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection
- Biopsy Kit Available

16HL7 High Frequency Linear Array

- Applications: MSK, Venous
- Number of Elements: 128
- Bandwidth: 16 – 7 MHz
- Transducer Footprint: 38 mm x 10 mm
- Aperture: 26 mm
- Ultra-Lightweight: .22 kg
- Ergonomic Handle
- 2.1 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection

Pedoff

- Application: Cardiac
- Number of Elements: 2 (1 Transmit and 1 Receive)
- Frequency: 2 MHz
- Transducer Footprint: 16 mm

8TE3 Transesophageal

- Motorized Adult Multiplane TEE Probe
- Application: Cardiac
- Number of Elements: 64
- Bandwidth: 8 – 3 MHz
- Footprint:
  - Tip Height: 10.3 mm
  - Tip Width: 14 mm
  - Shaft Length: 100 cm
- Field of View: 97°
- Weight: 1 kg
- 1.75 Meter Cable
- Small Lightweight Connector for One-Handed Smart Connection

Clinical Applications Packages & User Presets

User Customizable Presets

- >10 User-Customized Presets can be Created per Clinical Application
- New Presets can be Created Based on Any Existing Factory-Optimized Preset
- User Presets can be Added or Deleted

Imaging Modes & Processing Options

Advanced Imaging Optimization Controls

- OmniBeam™ Image Enhancement
- TeraVision™ II Image Optimization
- Enhanced Needle Visualization (ENV)
- Frame Rate (Max.): 150 FPS
- Dynamic Range: 200 dB in 1 dB Steps
- Line Density (Max.): 10 lines/mm
- Persistence: 7 Levels
- B-Mode Display Parameters (Preset Dependent):

uSmart® 3200T NexGen Ultrasound System Specifications

- Maximum Depth:
  - 16L5 = 7 cm
  - 15L4 = 12 cm
  - 12L5 = 12 cm
  - 8L2 = 15 cm
  - 4V2 = 30 cm
  - 8V3 = 20 cm
  - 5C2 = 30 cm
  - 9MC3 = 16 cm
  - 8EC4 = 14 cm
  - 16HL7 = 7 cm
- Multiple Focal Zones: Up to 4
- Focal Positions: Up to 12
- Gray Maps: 12
- Internal TGC
- Read/Write Zoom

Color Doppler Display Parameters

- Transmit Frequencies: Selectable from 2 MHz – 8 MHz
- Color Wall Filters: Adjustable
- Color Maps: 8
- Color Persistence: Adjustable
- Color/B-mode Priority Levels: 0 – 100%
- Wall-Filter: 0 – 1200 Hz
- Color Zoom
- Color Invert
- Hide/Show Color Display
- Color Side-by-Side
- Focal Zone: Auto Set to Color Box, Independent of 2D Focal Zone
- Focal Positions: Up to 12
- Color Steering:
  - Steering Angle: -20° – 20° in Variable Increments
  - Auto-Color Invert with Color Box Steering in Color Doppler

Pulsed Wave Doppler Imaging Display Parameters

- Transmit Frequencies: Selectable from 2 MHz – 8 MHz
- FFT Processing: Up to 8k Points
- Highest Sweep Speed: 200 mm/s
- PW Sweep Speeds: 25, 50, 75, 100, 150, 200 mm/s
- PW Maps: 1
- Filters: 50 – 1200 Hz
- PRF Range: 200 – 22000 Hz
- Quick Auto Angle Steering: -60°/0°/60°
- Fine Angle Correction: -90° – 90° in 1° Steps
- Sample Volume Size: 0.5 mm – 2 cm

PW Display Options

- 8 Colorizations

PW Doppler Spectral AutoTrace

- Mean Trace Display
- Velocity Measurement Points Display
- Configurable Automated Measurements Display (PSV, EDV, RI, PI, etc.)

Continuous Wave Doppler Display Parameters

- Transmit Frequency: 1.7 and 2 MHz
- FFT Processing: Up to 8k Points
- Highest Sweep Speed: 200 mm/s
- CW Sweep Speed: 25, 50, 75, 100, 150, 200 mm/s
- CW Maps: 1
- Filter: 4 Hz – 8700 Hz
- PRF Range: 200 – 35,000 Hz

CW Display Options

- 5 Display Formats
- Spectral Invert
- 8 Colorizations

EKG Capability

- 3 Lead
- EKG Trace
- Heart Rate Display
- Gated Acquisition by Beats

Dual Imaging

- Full Featured Dual Imaging Mode with Independent Controls and Measures in Side-By-Side and Top/Bottom Planes:
  - Dual B-Mode
  - Dual B-Mode and Color

Image Review Post-Processing

- Measurements
- Annotations
- Body Markers
- Cine Clip Capture and Review
- B-Mode: 1500 Frames
- CD/PD: 400 Frames

Cine Clip Capture Features

- Clip Capture:
  - Choice of 1 – 10 Sec. (Prospective and Retrospective) Conventional Modes
  - Frame-By-Frame Image Review of Clips While Frozen
- Trim Frames from Beginning or End of Retrospective or Prospective Clips
- PW: Gain, Dynamic Range, Sweep Speed, Display Format, PW Map, Angle Correct, Baseline, Invert, Range, Persistence Correction, Color Gain, B-Mode Gain, Play Spectral Data, Add/Remove/Adjust, TeraVision™ II

Annotations

- Full Annotation Packages Optimized for the Following Application Presets:
  - Breast, Cardiac, OB/GYN, TCD, Thyroid, Abdominal, MSK, Venous, Vascular (Carotid, Upper and Lower Extremity)
  - Fully User-Customizable Text and Text Replacement Lists per Preset
  - Default Settings are Optimized for the Most Commonly Used Annotations
  - Customized Home Cursor Position per Display Format
  - Text Replacement and Text Replacement Groups
  - Title Text and Free Text Options Available
  - Intuitive On-Screen Text Editing
  - Freely Reposition Annotations
  - Easily Insert Words into Existing Annotations
  - Four Programmable Areas for User Ease-of-Use (Laterality, Anatomy, Orientation, Location)

Body Markers

- Full Pictographic Body Marker Packages Optimized for the Following Application Presets:
  - Abdominal, Breast, Cardiac, FAST, OB/GYN, MSK, TCD, Thyroid, Venous, Vascular Access, Vascular (Carotid, Upper and Lower Extremity)
  - Rapidly Depict and Change Transducer Orientation Directly on the Body Marker Using the Touch Screen
  - End-User Fully Customizable Body Marker Packages per Imaging Preset

On-Screen Biopsy Guidelines

- On-Screen Biopsy Guidelines for the 15L4, 12L5, 8EC4 and 5C2
- Biopsy Mode Disables Auto Freeze to Enhance Workflow
- Guidelines Correspond to Appropriate CIVCO and Protek Biopsy Kits

Full Suite of Measurements

- Available in Frozen, Dual and Clip Images
- > 20 Unique Cursors per Image

uSmart® 3200T NexGen Ultrasound System Specifications

- Measurement Packages:
  - Cardiology
  - OB
  - Vascular
- Unique Measurement Features:
  - Measurements can be Performed Directly on the Touch Screen Using a Finger or Stylus
  - Measurements can be Made Across Dual Images at the Same Scaling
  - 2D and PW Measurements Performed on the Same Image
- Basic Measurements:
  - Distance (mm or cm)
  - Ellipse (Major Axis, Minor Axis, Area, Perimeter)
  - Trace (Area, Perimeter)
  - Generic Velocity (Vel), Peak Velocity (PSV), End Velocity (EDV), Minimum Diastolic Velocity (MDV)
  - Time Average Peak Velocity (TAPV), Time Average Mean Velocity (TAMV)
  - Resistive Index
  - Systolic/Diastolic Ratio
  - Acceleration Time
  - Pressure Gradient
  - Doppler Trace for Time and Slope
  - Doppler Time
- Advanced Measurements:
  - Volume Flow (Diameter and TAMV)
  - ICA/CCA Ratio for Carotid Flow
  - Pediatric Hip Tools (Hip Angle and d:D Ratio)
  - Auto PS/ED
  - Pulsatility Index
  - Vascular Auto Trace
- Label then Measure Capability:
  - Measurements can be Launched Directly from a Label
  - Clearly Identify Common Measurements on Screen and in the Report
  - Common Labels Available for all Clinical Applications

Study Review

- Quick Study Review:
  - Image Thumbnails on Main Display Allow Quick Review
  - Preview, Open or Delete Images Instantly
  - Print, Export or Email Individual Images
- Full Study Review:
  - Selectable Study List
  - Display Study Images in 1, 2, 4 and Random Image Formats
  - Replay Cine-Clips in Real-Time
  - Thumbnail View
  - Print, Export or Email Multiple Images, Whole Study or Randomly Selected
  - Export Images/Clips Directly to USB or Network in JPEG, AVI, BMP or DICOM Format

Worksheets

- Clinical Reporting:
  - Anatomical Images with Associated Lateral Measurements
  - Patient Information Automatically Populated from Study Data
  - Measurements Automatically Populated via Labeled Measurements Workflow
  - Large, Easy-to-Read Design
  - Printable on Windows® Compatible Printers (Off-the-Shelf)
- Configurable Reporting:
  - Upload Hospital Logo for Report Header
  - Integrated Patient History from Patient Data Entry Screens
  - Easily Insert Images into Report
  - Free-Form Text Areas for Exam Comments and Conclusions
  - Report Preview
  - Export Reports Directly to USB or Network as a Portable Document Format (PDF) File or in DICOM Format

DICOM & Connectivity

- 10/100/1000 BaseT Ethernet Compliant Connectivity
- 802.11 a/b/g/n/ac
- TCP/IP
- Bluetooth 4.0
- User Defined DICOM Server List:
  - Create, Edit and Delete Named Servers
  - Configure AE Title, IP Address or Computer Name, Port, Timeout, Retry Interval, Retries and Packet Size
  - Local Host Configuration
  - DICOM Verification Service
  - DICOM Job Management
- DICOM Storage:
  - Allows Connectivity to PACS
  - Allows "End-of-Exam" Transfer of Study Data
  - Batch Send Multiple Studies
  - Send Study Data to Multiple PACS Simultaneously
  - Queue Studies for Background Transfer
  - Queue Studies When Off-Line During Portable Exams for Automatic Transfer when Connected
- DICOM Modality Worklist (MWL):
  - Auto-Population of Patient Data Entry Screen from Hospital HIS/RIS server
  - Sort or Filter Worklist According to Patient Information (Name, ID, Date/Time, etc.)
  - Automatic MWL Query Options
  - Manual MWL Query Options
  - Use MWL Off-Line During Portable Exams
- DICOM Media Storage:
  - Export Multiple Studies in DICOM Format to USB Devices (Including CD/DVD), SD Cards or Network Drives
  - DICOM Conformance Statement Available Upon Request
- DICOM Structured Reporting (DICOM SR):
  - Cardiac
  - Vascular

Patient Privacy Features

- Export Images with or without Patient Sensitive Identification

System Configuration

- Personalized Institution Header with Customer Logo for Reports
- Configurable Institution, Referring Physician, Interpreting Physician and Operator Lists
- Selectable Date and Time Formats
- Metric and English Patient Unit Configuration
- Adjustable System Auto-Freeze Time (1-1000 Minutes)
- Power and Battery Level Indicator
- System Free Disk Space Indicator
- System Clock
- Network Status Indicator
- DICOM Connectivity Indicator
- Selection of Control Panel Position
- Default Patient Name and ID
- Print Setup and Layout Configuration
- Auto-Delete of Exported Studies Options
- Multi-Touch Gesture Configuration
- Needle Guide Target Indicator and Calibration
- Backup and Restore of User Settings

uSmart® 3200T NexGen Ultrasound System Specifications

Preset Specific Configurations

- Image Scaling Options
- Split-Screen Options
- Acoustic Display Options:
  - MI Display
  - TIS Display Selection
  - TIB Display Selection
  - TIC Display Selection
- Prospective or Retrospective Acquisition
- Transducer Center Marker Options
- Horizontal Ruler Option
- Independent M-Mode and Doppler Format Selections
- Measurement Result Display Location
- Measurement Caliper Size
- Automatic Measurement Options
- Measurement Result Display Location
- Simultaneous and Non-Simultaneous Spectral Doppler Update Modes
- Adjustable Auto-Zoom of 2D Images in Spectral Doppler
- Default Correction Angle
- Auto-Steer Correction Angle
- Markers or Measurements on Freeze
- Stored Image Frame Rate Limit
- Configurable Annotations Libraries
- Configurable Body Marker Libraries
- Configurable Clinical Presets
- Configurable Measurement Packages

Data Management

- Hard Disk Capacity: 256 GB Internal SSD
- Image Storage: 100,000 Images (Estimated)
- Study Storage: 1000 Typical Studies (10 Images and Data)

Data Export

- DICOM and PC Format Exports to SD Cards, USB Devices (Including CD/DVD) or Network Locations
- DICOM Connectivity Association and Setups
- Baseline JPEG, Run Length Encoded (RLE) and Uncompressed DICOM Transfer Syntaxes
- Independent image and Clip JPEG Quality Factor Selections
- Optional Burn-In of Measurement and Annotation Overlays
- DICOM Export to Multiple PACS or DICOM Servers
- Export Images to USB Memory Stick
  - JPEG
  - BMP
  - AVI
- Organized Directory Structure to Quickly Find Exported Studies
- PC Export to Network/EMR

Peripherals, Ports & Printers

- Thermal Image Printer Supported:
  - Sony Black & White Model UP-D897
- Off-the-Shelf Printers Supported:
  - Any Compatible with Windows® 10
- Wireless and Bluetooth
- 1 Ethernet Port
- 2 USB 3.0 Ports Allow Image Export to Memory Stick or Hard Drive
- Micro HDMI Port
- SD Memory Card Slot

Footswitch

- 2-Function Footswitch
  - Easily Connects to USB Port
  - Programmable from a Set of Frequently Used Operations
- 3-Function Footswitch
  - Easily Connects to USB Port
  - Programmable from a Set of Frequently Used Operations

Accessories

- Multi-Probe Connector Kit (Optional)
- Smart Case™ (Optional)
- Roller Bag (Optional)
- Stylus
- Wireless Keyboard
- Neoprene Screen Cover
- Screen Cloth

Language Support

- User Controls Supported in English
- On-Screen Smart Guide™ Available in English
- On-Screen Keyboards Supported in English and Other Windows® 10 Supported Input

Remote Service Capabilities

- uConnect® On-Line Support and Training
- Easy Software Updates
- Execute Scripts
- Capable of Retrieving and Analyzing Log Files, and Backing Up the System Configurations

Electrical/Environmental Specifications

- Universal Voltage Power Supply
- Power Supply Input Rating:
  - 100V – 240V AC, 47 – 63 Hz
  - 1.2A Max at 100V AC
  - 0.5A Max at 240V AC
- System Power Consumption:
  - 70 Watt Typical Scanning and Battery Charging
  - 40 Watt Typical Scanning and Battery Fully Charged
  - 25 Watt Not Scanning and Battery Fully Charged
- Temperature Range:
  - Operating: 10°C – 35°C (50°F – 95°F)
  - Storage: -24°C – 45°C (-13°F – 113°F)
- Humidity Range:
  - Operating: 20% RH – 80% RH
  - Storage: 15% RH – 90% RH

Standards Compliance

- ISO 13485 Certified
- uSmart® 3200T NexGen is a Medical Device in Class II per the FDA and European Medical Directive 93/42/EEC
- RoHS Compliant
- ETL Listed for US and Canada
- uSmart® 3200T NexGen is Compliant with the Following Safety Standards for:
  - IEC/EN 60601-1, 60601-1-2, 60601-1-6
  - ISO 10993-1
  - NEMA UD 2, UD 3
  - IEC 60601-2-37

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