LOGIQ P5 Premium

TruScan Imaging Technology

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Product Description

- The LOGIQ P5 Premium is a Premium performance, highly mobile and easy to use multipurpose color Doppler Ultrasound imaging system designed for Obstetrical, Gynecological, Cardiac, Musculoskeletal, Vascular, Urological, Small Parts, and Superficial, Pediatric, Neonatal, Transcranial, and Abdominal applications.

System Architecture

TruScan Architecture – GE's exclusive, software-intensive ultrasound imaging platform that gives you unsurpassed computational power, image-manipulation capability, workflow flexibility and product upgradeability, via software or hardware.

TruAccess is the GE-exclusive, raw-data processing technology that has changed the way ultrasound imaging is performed. By accessing raw data, TruScan achieves excellent image quality and ensures unsurpassed image management capabilities.

SmartScan utilizes new advances in operating algorithms and system operations to improve image acquisition and patient throughput while increasing diagnostic confidence and exam consistency.

ComfortScan, our most advanced ergonomic design ever, helps maximize productivity and simplify every exam you perform.

General Specification

Dimensions and Weight

- Height: 135/141 cm
- Width: 43cm
- Depth: 64cm

- Weight: approx. 75 kg (165 lb.)

Electrical Power

- Voltage: 100-120Vac or 220-240Vac
- Frequency: 50/60 Hz
- Power: Max. 750 VA with Built-in and On-Board Peripherals
- Maximum Thermal Output: 2200 BTU/hr.

Console Design

- 3 Active Probe Ports
- Integrated HDD (Capacity: 160GB)
- Integrated DVD-R/W Drive
- On-board Storage for Peripherals (Max 3 peripherals)
  - B/W-printer, color printer, DVD recorder
- Wheels
  - Wheel diameter: 12.5cm
  - Integrated locking mechanism that provides rolling lock and optional caster swivel lock
- Probe Holders, Removable for Cleaning and Washing
- Gel Holder, Removable for Cleaning and Washing
- Air Filters, Easily Removable
- Front Handle
- Rear Handle (Optional)
- LCD Flexible Arm Kit
- Drawer (Optional)
- Probe Cable Hanger (Optional)
- Urology Probe Holder (Optional)

User Interface

Operator Keyboard

- Keyboard Width: 43cm
  Keyboard Height: 84/90cm
- Alphanumeric Keyboard
- Ergonomic Hard Key Operations
- Indicator Lights Identify Activated Keys
- Integrated Recording Keys for Remote Control of Up to 2 Peripheral Devices and DICOM Devices
- 8 TGC Pods, with Re-mapping Functionality at Any Depth

Monitor

- 15 inch TFT LCD Monitor
- XGA Format:
  - Display size: 1024 x 768
  - Recording area: 800 x 600
- Adjustable Tilt/Swivel
- Digital Brightness/Contrast Adjustment

System Overview

Applications

- Abdominal
- Obstetrical
- Gynecological
- Cardiac
- Musculoskeletal
- Vascular
- Urological
- Small Parts and Superficial
- Pediatric and Neonatal
- Transcranial

Scanning Methods

- Electronic Sector
- Electronic Convex
- Electronic Linear
- Mechanical Volume Sweep

Transducer Types

- Sector Phased Array
- Convex Array
- Micro-convex Array
- Linear Array
- Doppler Pencil
- Bi-plane Micro-convex Array
- Real-Time Volume 4D Probe

Operating Modes

- B-Mode
- M-Mode
- Optional Anatomical M-Mode (AMM)
- Color Flow Mode (CFM)
- Power Doppler Imaging (PDI) with Directional Map
- PW-Doppler with High PRF
- CrossXBeam
- SRI-HD
- B-Flow
- M-Color Flow Mode
- Optional Steering CW-Doppler
- Optional Dedicated CW-Doppler
- Anatomical M-Mode (option)
- Anatomical M-Color Mode (option)
- Coded Contrast Imaging (option)
- 3D/4D Volume Modes

System Standard Features

- Hard Disk for image storage (120 GB)
  - Without compression:
    - Raw DICOM: HDD capacity 33,000 images
    - DICOM:
      - Image Only: HDD capacity 71,000 images
- Cine Memory Frames (60 sec) (192 MB) > 1,000 depending on probe, imaging depth, line density and field of view
- Real-Time Triplex Mode at any Depth and PRF
- Automatic Optimization
  - Auto Tissue Optimization: ATO
  - Auto Spectrum Optimization: ASO
  - Auto Color Optimization: ACO
- Coded Harmonic Imaging (CHI)
- Coded Excitation (CE)
- Virtual Convex
- Patient Information Database
- Image Archive on Hard Drive and DVD
- Easy Backup for Media
- Vascular Calcs
- Cardiac Calcs
- OB Calcs
- Fetal Trending
- Multi Gestational Calcs
- Hip Dysplasia Calcs
- Gynecological Calcs
- Urological Calcs
- Renal Calcs
- Real-Time Auto Doppler Calculations
- TruAccess, Raw Data Processing
- On-board Reporting
- MPEGView
- Key Macro
- Network Storage
- Auto Focus
- Wide Field of View on convex
- Simultaneous Display on BE9CS probe
- Quick Save
- B-Steer
- Virtual Convex with X-Beam
- ED Report
- LOGIQView
- CrossXBeam
- SRI-HD
- B-Flow
- Easy 3D (Baby Face)
- Real-Time 4D
- Report Designer
- Flexible Arm Kit

System Options

- DICOM 3.0 Connectivity
- InSite™ Capability
- ECG
- Coded Contrast Imaging
- CW-Doppler
- Anatomical M-Mode (AMM)
- Advanced 3D, with 3D Landscape
- 3-Pedal Foot Switch, with Programmable Functionality
- Rear Handle
- Drawer
- Probe Cable Hanger
- Endo Probe Holder
- L5/L3 data conversion tool
- 3-Pedal Foot Switch
- Remote Control Switch
- PDF Report Writer conversion

Media & Peripheral Options

- Integrated Mounting Kits and Remote Controls Provided for
  - B/W Digital thermal printer
  - Color Digital thermal printer
  - DVD Video Recorder

Display Modes

- Live and Stored Display Format: Full size and split screen - both w/ thumbnails. For Still and CINE
- Review Image Format: 4x4, and "thumbnails". For Still and CINE
- Simultaneous Capability
  - B/PW
  - B/CFM or PDI
  - B/M
  - B + CFM/M
- Real-Time Triplex Mode
  - (B + CFM or PDI/PW)
  - B-Flow + PW
  - Dual B (B/B)
  - Dual B + CFM or PDI
- Selectable Alternating Modes
  - B/M
  - B/PW
  - B + CFM/M
  - B + CFM (PDI)/PW
  - 3D – Mode
  - 3D – Color Mode (option)
  - B/CW (option)
  - B + CFM (PDI)/CW (option)
- Multi Image Split Screen
  - Live and/or frozen
  - B + B/CFM or PDI
  - Independent CINE playback
  - Quad screen format
- Zoom: Write/Read/Pan
- Colorized Image
  - Colorized B
  - Colorized M
  - Colorized PW
  - Colorized CW (option)
- Time line Display
  - Independent Dual B/PW Display
  - Display Formats:
  - Top/Bottom selectable format (Size: 1/2:1/2; 1/3:2/3; 2/3:1/3)
  - Side/Side selectable format (1/2:1/2; 1/3:2/3; 0:1) Switchable after freeze
- Virtual Convex
- CrossXBeam

Display Annotation

- Patient Name: First, Last, & Middle name each store 27 characters. Up to 27 total characters displayed.

- Patient ID: 31 characters. Up to 27 total characters displayed.
- Age, Sex and Birth Date
- Hospital Name: 23 characters.
- Date: 3 Types selectable
  MM/DD/YY,
  DD/MM/YY,
- YY/MM/DD
- Time: 2 types selectable
- 24 hours, 12 hours
- Gestational Age from LMP/EDD/GA/BBT
- Probe Name
- Gray Map names
- Probe Orientation
- Depth Scale Marker
- Lateral Scale Marker
- Focal Zone Markers
- Image Depth
- Zoom Depth
- B-Mode
  - Gain
  - Dynamic Range
  - Imaging Frequency
  - Edge Enhance
  - Frame Averaging
  - Gray Map
  - ATO On/Off
- M-Mode
  - Gain
  - Dynamic Range
  - Time Scale
- Doppler Mode
  - Gain
  - Angle
  - Sample Volume Depth and Width
  - Wall Filter
  - Velocity and/or Frequency Scale
  - Spectrum Inversion
  - Time Scale
  - PRF
  - Doppler Frequency
- Color Flow Mode
  - Line Density
  - Frame Averaging
  - Packet Size
  - Color Scale
  - Color Velocity Range and Baseline
  - Color Threshold Marker
  - Color Gain
  - PDI
  - Color Scale Inversion
  - Color Doppler Frequency
- TGC Curve
- Acoustic Frame Rate
- Cine Frame Number
- VCR Counter
- VCR Status
- VCR Playback Counter
- Body Pattern
- Application Name
- Measurement Results
- Operator Message
- Displayed Acoustic Output
  - TIS: Thermal Index Soft Tissue
  - TIC: Thermal Index Cranial (Bone)
  - TIB: Thermal Index Bone
  - MI: Mechanical Index
- % of Power output
- Biopsy Guide Line and/or Zone
- Heart Rate

General System Parameters

System Setup

- Pre-programmable Categories
- User Programmable Preset Capability
- Factory Default Preset Data
- Languages: English, French, German, Spanish, Italian, Portuguese, Russian, Greek, Swedish, Danish, Dutch, Finnish, Norwegian, Japanese, Chinese
- OB Report Format: 5 Types, Tokyo Univ., Osaka Univ., USA, Europe, and ASUM
- EFBW: 10 types, Japan, USA and Europe (Tokyo Univ., Osaka Univ., Tokyo Shinozuka, JSUM, German, Shephard, Merz, Hadlock/Shephard, Williams, Brenner)
- 348 Pre-defined Annotations and User Programmable Libraries/Annotations
- Body Patterns: 140 human types plus 14 animal types
- Customized Comment Home Position

Complete User Manual available on board through Help (F1)

User Manual and Service Manual are included on CD with each system. A printed Manual is available upon request.

CINE Memory/Image Memory

- CINE Memory: 192MB
- Dual Image CINE Display
- Quad Image CINE Display
- CINE Gauge and CINE Image Number Display
- CINE Review Loop
- CINE Review Speed: 20 steps (10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 150, 200, 300, 400, 500, 600, 700, 800, 900, 1000%)
- Selectable CINE Sequence for CINE Review
- Measurements, Calculations and Annotations on CINE Playback
- Scrolling Timeline Memory
- Cine Capture Function

Image Storage

- On-board database of patient information from past exams
- Storage Format: DICOM/Raw Data
- DICOM Still Image Storage Size:
- Gray Image: ~300K to ~1.3 MB
- Color Image: ~900K to 1.9 MB
- Multi-frame
- Display Format: Full size, 4x4, and "thumbnails"
- Live image and stored image side-by-side display
- CD-R storage: 650, 700 MB
- DVD storage: -R (4.7GB) and - RAM (9.4GB/Double sided Non-cartridge)
- Conversion to JPEG, AVI (SaveAs) and WMV (MPEGVue) file formats
- Internal Hard Drive Image Storage: 120 GB
- External USB 2.0 Hard Drive support for Import, Export, DICOM Read, SaveAs and MPEGVue
- USB 1.1 / 2.0 Memory Stick support for SaveAs and MPEGVue
- Network Storage support for Import, Export, DICOM Read, SaveAs, MPEGVue

Connectivity

- Ethernet network connection
- RS-232 serial data output (need a converter cable)
- DICOM 3.0 (option)
  - Verify
  - Print
  - Store
  - Modality Work-list
  - Storage Commitment
  - Modality Performed Procedure Step

(MPPS)
- Media Exchange
- Off network / mobile storage queue
- Query/Retrieve; supported on Centricity and other compatible vendors
- Structured Reporting; compatible with ViewPoint LOGIQWorks
- Public SR Template
- Media Store of SR
- iLinq capability

Scanning Parameters

- Digital Beam former
- 2,560 processing channels
- Frame Rate: 1,744 Hz Maximum
- Displayed Imaging Depth: 0 – 30 cm
- Minimum Depth of Field: 0 –2cm (probe dependent)
- Maximum Depth of Field: 0 – 30 cm (probe dependent)
- Transmission Focus
  - 1 – 8 Focus Points selectable (probe and application dependent)
- Continuous Dynamic Receive Focus/Aperture
- Multi-Frequency/Wideband Technology
- Frequency Range 1 to 15MHz
- 256 Shades of Gray
- Up to 197 dB processing Dynamic Range
- 16,777,216 Hues of Color
- Adjustable Field of View (FOV) up to 170 degree depending on probe
- Image Reverse: Right/Left
- Image Rotation: 4 steps
- Rotation: 0°, 90°, 180°, 270°

B-Mode

- B/M Acoustic Output: 0 – 100%, 2% step
- Image Reverse: On/Off
- B Color: 10 types
- Thermal Index: TIC, TIS, TIB
- Softener: 4 steps
- Focus Number: 8 steps
- Focus Width: 3 types
- Range Focus: On/Off
- Compression: 0.5 – 1.5, 0.1 step
- Line Density: 4 steps
- Line Density Zoom: 4 steps
- Suppression: 6 steps
- Frame Average: 8 steps
- Edge Enhance: 6 steps
- Scanning Size (FOV or Angle): probe dependent, see probe specifications
- Gray Scale Map: 23 types
- Clear Map: 23 types
- Tint Map: 10 types
- Gain: 0 – 98 dB, 2 dB step
- Dynamic Range: 30 – 120 dB, 3 dB step
- Depth: 1 – 30 cm, 1 cm step, depends on probe.
- Rejection: 6 steps
- Frequency: Up to 5 steps, depend on probe
- Auto Line Density: On/Off pre-settable
- Steered Linear: +/- 15°

Color Flow Mode

- Base Line: 0 – 100 %, 10 % step
- Invert: On/Off
- CF/PDI Focus Depth: default pre-settable for 0 – 100 % of ROI in depth, 10 % step
- CF/PDI Flash Suppression: 2 steps
- CF/PDI Acoustic Output: 0 – 100%, 10% step
- CF/PDI Angle Steer: 0, +/- 10°, +/- 20°
- Packet Size: 5 – 16, dependent on probe/application
- Line Density: 5 steps
- Line Density Zoom: 5 steps
- Frame Average: 7 steps
- PRF: 280 Hz – 19600 Hz
- Spatial Filter: 6 steps
- Gain: 0 – 40 dB, 0.5 dB step
- Wall Filter:4 steps depend on probe/application
- Scanning Size (FOV or Angle): probe dependent
- CF/PDI Vertical Size (mm) of ROI: default pre-settable
- CF/PDI Center Depth (mm) of ROI: default pre-settable
- CF/PDI Frequency: Up to 3 steps, depend on probe
- Color Map: 20 types depend on application
- Transparent: 5 steps
- Color Threshold: 0 – 100 %, 5 % step
- Auto Line Density: On/Off pre-settable
- PW/CF Ratio: 1, 2, 4
- Accumulation: 8 steps

Power Doppler Imaging

- PDI Map: 13 types
- CF/PDI Flash Suppression: 2 steps
- CF/PDI Focus Depth: default pre-settable for 0 – 100 % of ROI in depth, 10 % step
- CF/PDI Acoustic Output: 0 – 100%, 10% step
- CF/PDI Angle Steer: 0, +/- 10°, +/- 20°
- Packet Size: 5 – 16, dependent on probe/application
- Spatial Filter: 6 steps
- Frame Average: 7 steps
- PRF: 280 Hz – 19600 Hz
- Power Threshold: 0 – 100 %, 5 % step
- Gain: 0 – 40 dB, 0.5 dB step
- Wall Filter: 7 steps depend on probe/application
- CF/PDI Frequency: Up to 3 steps, depend on probe
- Auto Line Density: On/Off pre-settable
- Transparent: 5 steps
- Invert: On/Off
- Accumulation: 8 steps

M-Mode

- Sweep Speed: 8 steps
- M Color: 10 types
- M/PW Display Format: V-1/3B, V-1/2B, V-2/3B, H-1/2B, H-1/4B, TL only
- B/M Acoustic Output: 0 – 100 %, 2 % step
- Rejection: 6 steps
- Dynamic Range: 30 – 120 dB, 3 dB step
- Edge Enhance: 6 steps
- Gray Scale Map: 23 types
- Clear Map: 23 types
- M Gain: 0 – 98 dB, 2 dB step

Anatomical M-Mode (option)

- M-Mode cursor adjustable at any plane
- Can be activated from a CINE loop from a live or stored image
- Available with Color Flow Mode
- M&A capability

PW/CW-Mode

- Maximum and Minimum Velocity Scales
  - Max: 10 m/sec
  - Min: 5 cm/sec
- Gray Scale Map: 4 types
- Dynamic Range: 24 – 60, 4 dB step

- Base Line: 5 – 95 %, 11 steps
- SV Gate: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16 mm
- Angle Correct: +/- 90°, 1° step
- Spectral Color: 6 types
- PW Sweep Speed: 8 steps
- Invert: On/Off
- M/PW Display Format: V-1/3B, V-1/2B, V-2/3B, H-1/2B, H-1/4B, TL only
- Duplex: On/Off (PW only)
- PW Acoustic Output: 0 – 100 %, 10 % step
- Spectral Averaging: 4 steps
- Time Resolution: 4 steps
- PW/CF Ratio: 1, 2, 4
- Rejection: 15 steps
- Gain: 0 – 32 dB, 1 dB step
- Wall Filter: 5 – 1500 Hz, 22 steps, depend on probe/application
- PW Angle Steer: 0, +/- 5, 10, 15, 20°
- PRF: 640 – 29800 Hz with PW, 50000 Hz with CW
- Sample Volume Depth: 29 steps default pre-settable
- CW-Mode (option) is Available on the Following Probes
  - 3S
  - 5S
  - 7S
  - 3Sp
  - 5Sp
  - P2D
  - P6D

Coded Harmonic Imaging

- Available on the Following Probes
  - 3.5C
  - 3.5CS
  - 3CRF
  - 4C
  - 5CS
  - E8C
  - E8CS
  - 8C
  - ERB
  - BE9C
  - BE9CS
  - 3S
  - 5S
  - 7S
  - 3Sp
  - 5Sp
  - 8L
  - 9L
  - 11L
  - 12L
  - i12L
  - i739
  - t739
  - 4D3C-L
  - 4DE7C
  - 4D8C
- Softener: 4 steps
- Line Density: 4 steps
- Line Density Zoom: 4 steps
- Suppression: 6 steps
- Edge Enhance: 6 steps
- Gray Scale Map: 23 types
- Clear Map: 23 types
- Tint Map: 10 types
- Gain: 0 – 98 dB, 2 dB step
- Dynamic Range: 30 – 120 dB, 3 dB step
- Rejection: 6 steps
- Auto Line Density: On/Off pre-settable
- Frequency: Up to 5 steps, depend on probe

Coded Excitation

- Available on the following probes the Following Probes
  - 11L
  - 12L
  - 8C
  - E8C
  - E8CS
  - BE9C
  - BE9CS
  - ERB

Virtual Convex

- Provides a Convex Field of View for Convex, Linear and Sector probes
- Available on the Following Probes
  - 8L
  - 9L
  - 10L
  - 11L
  - 12L
  - i12L
  - t739
  - i739
  - 3S
  - 5S
  - 7S
  - 3Sp
  - 5Sp
  - ERB (Linear)
  - 4C
  - 5CS
  - 4D3C-L
  - 3CRF
  - 3.5C
  - 3.5CS

Automatic Optimization

- Optimize B-Mode, B-Flow image to improve contrast resolution.
- Selectable amount of contrast resolution improvement (low, medium, high)
- Auto-TGC in B-Mode and Color – adjusts overall and axial gain
- Optimize Spectral Waveform – adjusts baseline, invert, PRF (on live image), and angle correction
- Algorithm works on focal zone/ number and depth changes
- Available on stored or live image
- Available in B-Mode, B-Flow, PW Doppler, Color

B-Flow

- Available on 8L, 9L, 10L, 11L, i739 and t739 Probes
- Background: On/Off
- Sensitivity/PRI: 14 steps
- Line Density: 5 steps
- Edge Enhance: 6 steps
- Frame Average: 8 steps
- Gray Scale Map: 23 types
- Clear Map: 23 types
- Tint Map: 10 types
- Dynamic Range: 30 – 120 dB, 3 dB step
- Rejection: 6 steps
- Gain: 0 – 98 dB, 2 dB step
- Auto Line Density: On/Off pre-settable
- Accumulation: 8 steps

Coded Contrast Imaging (option)

* THIS OPTION NOT AVAILABLE IN UNITED STATES.

- Coded Harmonic Angio: Available on 3.5C, 3.5CS, 4C and 5CSprobes
- Tissue Background Selection: 4 steps
- TruAgent Detection: Available on 3.5C, 3.5CS, 4C and 5CS probes
  - 2 frequencies on 3.5C and 3.5CS, 1 on 4C and 5CS probes
- Coded Phase Inversion:

- 2 types, Available on 3.5C and 3.5CS probes
- 3 type, Available on 4C, 5CS probes

- Tissue Background Selection: 4 steps
Max Enhancement: On/Off
- Gray Scale Map
- Clear Map
- Contrast Clock Display: Up to 2
- Time Trigger Scan: 0.3, & 0.5 – 10 sec, 0.5 sec step
- Time Intensity Curve Analysis

- Accumulation: 8 steps
- SRI-HD

LOGIQView

- Available on all probes
- Extended Field of View Imaging
- For use in B-Mode
- LOGIQView Status
- Auto detection of scan direction
- Pre or post-process zoom up to 10X
- Rotation
- Auto best fit on monitor
- Measurements in B-Mode
- Up to 60 cm scan length

Advanced 3D (option)

- Acquisition of Color data
- Automatic rendering
- 3D Landscape technology
- 3D Movie
- Main Mode

CrossXBeam

- Provides Spatial Compounding
- Available on the linear and convex probes
  - 3CRF
  - 3.5C
  - 3.5CS
  - 4C
  - 5CS
  - 8C
  - E8C
  - E8CS
  - 8L
  - 9L
  - 10L
  - 11L
  - 12L
  - i12L
  - i739
  - t739
  - BE9C
  - BE9CS
  - 4D3C-L
  - 4DE7C
  - 4D8C
  - ERB

- Provides 3, 5 or 7 angles for Compounding on Linear probes, 3 or 5 angles on Convex probes
- Compatible with Side by Side Display
- Compatible with: Color mode, Timeline mode, SRI-HD, Coded Harmonic Imaging, Virtual Convex

SRI-HD

- High Definition Speckle Reduction Imaging
- Provides 6 levels of speckle reduction
- Side by Side Display
- Compatible with ALL linear, convex and sector transducers
- Compatible with ALL scanning mode
- Compatible with Side by Side Display

Real-Time 4D

- Acquisition Modes:
  - Real-Time 4D B-Mode
  - Static 3D B-Mode
- Visualization Modes:
  - 3D Rendering (diverse surface and intensity projection modes)
  - Sectional Planes (3 Section planes perpendicular to each other)
- Render Mode:
  - Surface texture, Surface Smooth, max-, min- and X-ray (average intensity projection), Gradient, Inversion, Glass Body, Mix Mode of two render Modes
- Curved 3 point Render start
- 3D Movie
- Scalpel: 3D Cut tool
- Display Format:
  - Quad: A-/B-/C-Plane/3D
  - Dual: A-Plane/3D
  - Single: 3D or A- or B- or C-Plane
- 4D Volume Frames/sec:
max: 30

Pre-Processing

- Write Zoom up to 8x
- B/M-Mode
  - Gain
  - TGC
  - Acoustic Output
  - Transmission Focus Position
  - Transmission Focus Number
  - Transmission Focus Width
  - Imaging Frequency
  - Edge Enhancement
  - Line Density Control
  - Live Anatomical M-Mode (option)
- PW/CW-Mode
  - Gain
  - Dynamic Range
  - Acoustic Output
  - Doppler Frequency
  - Velocity Scale (PRF)
  - PW/CF Ratio
  - Wall Filter
  - Time Resolution
  - Sample Volume Gate for PW-Mode
    Length
    Depth
- Color Flow Mode
  - CFM Gain
  - CFM Velocity Scale (PRF) or PFD Scale (PRF)
  - Acoustic Output
  - CFM Frequency
  - Wall Filter
  - Packet Size
  - CFM Spatial Filter
  - CFM Line Density
  - CFM Regression Filter
  - Accumulation

Post-Processing w/ TruAccess (Raw Data)

- SRI-HD – Selectable level of Speckle Reduction Imaging
- Max Read Zoom to 16x
- B/M-Mode
  - ATO (Auto Tissue Optimization)
  - Image Reverse
  - Image Rotation
  - Gray Map
  - Colorized B and M
  - Gain
  - Dynamic Range
  - TGC
  - Compression
  - Rejection
  - Frame Averaging
  - B Softener
  - Suppression
  - Sweep Speed for M-Mode
  - Anatomical M-Mode – AMM (option)

- PW/CW-Mode
  - ASO (Auto Spectral Optimization)
  - Base Line Shift
  - Gray Map
  - Post Gain
  - Compression
  - Rejection
  - Spectral Averaging
  - Colorized D
  - Display Format
  - Sweep Speed
- Color Flow Mode
  - ACO (Auto Color Optimization)
  - Base Line Shift
  - Color Map
  - Post Gain
  - Frame Averaging
  - CFM Display Threshold
  - Angle Correct (PW mode)
  - Quick Angle Correct (PW-Mode)
  - Auto Angle Correct (PW-Mode)
  - Spectral Invert for Color and Doppler
- 3D reconstruction from a stored CINE loop
- Anatomical M-Mode - AMM (option)
- Accumulation
- Cine Capture

Physiological Input Panel (Option)

- Physiological Input
- ECG, 1 channel
- Dual R-Trigger
- Pre-settable ECG R-Delay Time
- Pre-settable ECG Position
- Adjustable ECG Gain Control
- Automatic Heart Rate Display

Measurements / Calculations

General B-Mode

- Depth & Distance
- Circumference (Ellipse / Trace)
- Area (Ellipse / Trace)
- Volume (Ellipsoid)
- % Stenosis (Area or Diameter)
- Angle between two lines

General M-Mode

- M-Depth
- Distance
- Time
- Slope
- Heart Rate

General Doppler Measurements/Calculations

- Velocity
- Time
- A/B Ratio (Velocities / Frequency Ratio
- PS (Peak Systole)
- ED (End Diastole)
- PS/ED (PS/ED Ratio)
- ED/PS (ED/PS Ratio)
- AT (Acceleration Time)
- ACCEL (Acceleration)
- TAMAX (Time Averaged Maximum Velocity
- Volume Flow (TAMEAN and Vessel Area)
- Heart Rate
- PI (Pulsatility Index)
- RI (Resistivity Index)

Real-Time Doppler Auto Measurements / Calculations

- PS (Peak Systole)
- ED (End Diastole)
- MD (Minimum Diastole)
- PI (Pulsatility Index)
- RI (Resistivity Index)
- AT (Acceleration Time)
- ACC (Acceleration)
- PS/ED (PS/ED Ratio)
- ED/PS (ED/PS Ratio)
- HR (Heart Rate)
- TAMAX (Time Averaged Maximum Velocity)
- PVAL (Peak Velocity Value)
- Volume Flow (TAMEAN and Vessel Area)

OB Measurements/Calculations

- Gestational Age by:
  - GS (Gestational Sac)
  - CRL (Crown Rump Length)
  - FL (Femur Length)
  - BPD (Biparietal Diameter)
  - AC (Abdominal Circumference)
  - HC (Head Circumference)
  - APTD x TTD (Anterior/Posterior Trunk Diameter by Transverse Trunk Diameter)
  - LV (Length of Vertebra)
  - FTA (Fetal Trunk Cross-sectional Area)
  - HL (Humerus Length)
  - BD (Binocular Distance)
  - FT (Foot Length)
  - OFD (Occipital Frontal Diameter)
  - TAD (Transverse Abdominal Diameter)
  - TCD (Transverse Cerebellum Diameter)
  - THD (Thorax Transverse Diameter)
  - TIB (Tibia Length)
  - ULNA (Ulna Length)
- Estimated Fetal Weight (EFW) by:
  - AC, BPD
  - AC, BPD, FL
  - AC, BPD, FL, HC
  - AC, FL
  - AC, FL, HC
  - AC, HC
- Calculations and Ratios
  - FL/BPD
  - FL/AC
  - FL/HC
  - HC/AC
  - CI (Cephalic Index)
  - AFI (Amniotic Fluid Index)
- Measurements / Calculations by: Jeanty, Merz, Tokyo University, Mercer, Hansmann, Erickson, Hill, Shephard, Hadlock, Hohler, Campbell
- Fetal Graphical Trending
- Growth Percentiles
- Multi-Gestational Calculations (4)
- Fetal Qualitative Description (Anatomical survey)
- Fetal Environmental Description (Biophysical profile)
- Programmable OB Tables
- Over 20 selectable OB Calcs.
- Expanded Worksheets

GYN Measurements/Calculations

- Right Ovary Length, Width, Height
- Left Ovary Length, Width, Height
- Uterus Length, Width, Height
- Ovarian Volume
- ENDO (Endometrial thickness)
- Ovarian RI
- Uterine RI
- Follicular measurements
- Summary Reports

Vascular Measurements/Calculations

- SYS DCCA (Systolic Distal Common Carotid Artery)
- DIAS DCCA (Diastolic Distal Common Carotid Artery)

- SYS MCCA (Systolic Mid Common Carotid Artery)
- DIAS MCCA (Diastolic Mid Common Carotid Artery)
- SYS PCCA (Systolic Proximal Common Carotid Artery)
- DIAS PCCA (Diastolic Proximal Common Carotid Artery)
- SYS DICA (Systolic Distal Internal Carotid Artery)
- DIAS DICA (Systolic Distal Internal Carotid Artery)
- SYS MICA (Systolic Mid Internal Carotid Artery)
- DIAS MICA (Diastolic Mid Internal Carotid Artery)
- SYS PICA (Systolic Proximal Internal Carotid Artery)
- DIAS PICA (Diastolic Proximal Internal Carotid Artery)
- SYS DECA (Systolic Distal External Carotid Artery)
- DIAS DECA (Diastolic Distal External Carotid Artery)
- SYS PECA (Systolic Proximal External Carotid Artery)
- DIAS PECA (Diastolic Proximal External Carotid Artery)
- VERT (Systolic Vertebral Velocity)
- SUBCLAV (Systolic Subclavian Velocity)
- Summary Reports
- Mean IMT Measurement Tools

Cardiac Measurements/Calculations

- Cardiac calculation package including extensive measurements and display of multiple repeated measurements
- Parameter annotation follow ASE standard

* See Supplement for details

Report Writer

- On-board reporting package automates report writing
- Formats various exam results into a report suitable for printing to a windows printer or reviewing on a standard PC
- Exam results include patient info, exam info, measurements, calculations, images, comments and diagnosis
- Standard templates provided
- Customizable templates

Probes

- 3.5CS Thin Wide Band Convex Probe
  - Applications: Abdomen, OB Gyn, Urology, Vascular
  - Probe Band Width: 2.0 – 5.2 MHz
  - Number of Element: 128
  - Convex Radius: 38 mmR
  - FOV (Max): 68°
  - Physical Foot Print: 48 x 11 mm
  - B-Mode Imaging Frequency: 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency: 4, 5, 5.2, 5.5 MHz
  - Doppler Frequency: 2.5, 3.3 MHz
  - Biopsy Guide Available: Single Angle, Reusable

- 3.5C Thin Wide Band Convex Probe
  - Applications: Abdomen, OB Gyn, Urology, Vascular
  - Probe Band Width: 2.0 – 5.2 MHz
  - Number of Element: 128
  - Convex Radius: 38 mmR
  - FOV (Max): 68°
  - Physical Foot Print: 48 x 11 mm
  - B-Mode Imaging Frequency: 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency: 4, 5, 5.2, 5.5 MHz
  - Doppler Frequency: 2.5, 3.3 MHz
  - Biopsy Guide Available: Single Angle, Reusable

- 3CRF Wide Band Micro-convex Probe
  - Applications: Abdomen, Urology, Vascular
  - Probe Band Width : 1.72 – 5.0 MHz
  - Number of Element: 128
  - Convex Radius : 20 mmR
  - FOV (Max) : 80°
  - Physical Foot Print : 28 x 12 mm
  - B-Mode Imaging Frequency : 2.0, 3.0, 3.5, 4.0 MHz
  - Harmonic Frequency : 3.6, 3.8, 4.0, 4.2MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - Biopsy Guide Available : Single Angle, Reusable

- 4C Wide Band Convex Probe
  - Applications: Abdomen, OB Gyn, Urology, Vascular
  - Probe Band Width : 1.55 – 5.0 MHz
  - Number of Element: 128
  - Convex Radius : 60 mmR
  - FOV (Max) : 58°
  - Physical Foot Print : 61 x 13 mm
  - B-Mode Imaging Frequency : 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency : 4.0, 5.0, 5.2, 5.5 MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - Biopsy Guide Available : Multi Angle, Reusable

- 5CS Convex Probe
  - Applications: Abdomen, OB Gyn, Urology
  - Probe Band Width : 1.9 – 6.0 MHz
  - Number of Element : 128
  - Convex Radius : 60 mmR
  - FOV (Max) : 58°
  - Physical Foot Print : 61 x 11 mm
  - B-Mode Imaging Frequency : 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency : 4.0, 5.0, 5.5, 6.0 MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - Biopsy Guide Available : Multi Angle, Reusable

- E8C Wide Band Micro-convex Probe
  - Applications : OB Gyn, Urology, Endocavity
  - Probe Band Width : 3.5 – 11.4 MHz
  - Number of Element : 128
  - Convex Radius : 11 mmR
  - FOV (Max) : 133°
  - Physical Foot Print : 26 x 5 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : Single Angle, Disposable and Reusable

- E8CS Wide Band Micro-convex Probe
  - Applications : OB Gyn, Urology, Endocavity
  - Probe Band Width : 3.35 – 11.0 MHz
  - Number of Element : 128
  - Convex Radius : 9 mmR
  - FOV (Max) : 170°
  - Physical Foot Print : 26 x 4.3 mm

- B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
- Harmonic Frequency : 8.0, 10.0 MHz
- Doppler Frequency : 4.0, 5.0 MHz
- Biopsy Guide Available : Single Angle, Disposable and Reusable

- 8C Wide Band Micro-convex Probe
  - Applications : Neonatal, Pediatrics
  - Probe Band Width : 3.5 - 11.4 MHz
  - Number of Element : 128
  - Convex Radius : 11 mmR
  - FOV (Max) : 133°
  - Physical Foot Print : 26 x 5 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : None

- 3S Wide Band Phased Array Sector Probe
  - Applications : Cardiac, Transcranial, Abdomen
  - Probe Band Width: 1.37 – 3.5 MHz
  - Number of Element : 64
  - FOV (Max) : 90°
  - Physical Foot Print : 19 x 12 mm
  - B-Mode Imaging Frequency : 2.0, 2.5, 3.0 MHz
  - Harmonic Frequency : 2.8, 3.0, 3.2, 3.6 MHz
  - Doppler Frequency : 1.7, 2.0, 2.2 MHz
  - CW-Doppler Frequency : 2.0 MHz
  - Biopsy Guide Available : Multi Angle, Reusable

- 5S Wide Band Phased Array Sector Probe
  - Applications : Cardiac, Transcranial, Abdomen
  - Probe Band Width : 2.0 – 5.3 MHz
  - Number of Element : 96
  - FOV (Max) : 90°
  - Physical Foot Print : 19 x 11 mm
  - B-Mode Imaging Frequency : 3.0 , 4.0, 5.0 MHz
  - Harmonic Frequency : 4.0, 5.0 MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - CW-Doppler Frequency : 2.5 MHz
  - Biopsy Guide Available: Multi Angle, Reusable

- 7S Wide Band Phased Array Sector Probe
  - Applications: Cardiac, Pediatrics, Abdomen
  - Probe Band Width : 2.88 – 8.3 MHz
  - Number of Element : 96
  - FOV (Max) : 90°
  - Physical Foot Print : 14 x 7 mm
  - B-Mode Imaging Frequency : 5.0, 6.0, 7.0 MHz
  - Harmonic Frequency : 6.0, 7.0, 8.0, 8.5 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - CW-Doppler Frequency : 4.0 MHz
  - Biopsy Guide Available : None

- 3Sp Wide Band Phased Array Sector Probe
  - Applications : Cardiac, Transcranial, Abdomen
  - Probe Band Width : 1.4 – 5.0 MHz
  - Number of Element : 64
  - FOV (Max) : 90°
  - Physical Foot Print : 16 x 14 mm
  - B-Mode Imaging Frequency : 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency : 3.0, 3.5, 4.0, 5.0, 5.5 MHz
  - Doppler Frequency : 1.8, 2.0, 2.5, 3.3, 4.0 MHz
  - CW-Doppler Frequency : 2.0 MHz
  - Biopsy Guide Available: Multi Angle, Reusable

- 5Sp Wide Band Phased Array Sector Probe
  - Applications : Cardiac, Transcranial, Abdomen
  - Probe Band Width : 2.0 – 8.4 MHz
  - Number of Element : 64
  - FOV (Max) : 90°
  - Physical Foot Print : 10 x 10 mm
  - B-Mode Imaging Frequency : 4.0, 5.0, 6.7, 8.0 MHz
  - Harmonic Frequency : 5.0, 6.0, 8.0, 10.0 MHz
  - Doppler Frequency : 2.7, 3.0, 3.3 4.0, 5.0 MHz
  - CW-Doppler Frequency : 2.5 MHz
  - Biopsy Guide Available: Multi Angle, Reusable

- 8L Wide Band Linear Probe
  - Applications : Vascular, Small Parts
  - Probe Band Width : 3.4 – 10 MHz
  - Number of Element : 192
  - FOV (Max) : 38 mm
  - Physical Foot Print : 38 x 4 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0, 12.0 MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : 0, +/- 5, 10, 15, 20°
  - Biopsy Guide Available : Multi Angle, Reusable

- 9L Wide Band Linear Probe
  - Applications: Vascular, Small Parts
  - Probe Band Width : 2.7 – 9 MHz
  - Number of Element : 192
  - FOV (Max) : 44 mm
  - Physical Foot Print : 44 x 6 mm
  - B-Mode Imaging Frequency : 5.0, 7.0, 9.0 MHz
  - Harmonic Frequency : 8.0, 10.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Steered Angle : 0, +/- 5, 10, 15, 20°
  - Biopsy Guide Available : Multi Angle, Reusable

- 10L Wide Band Linear Probe
  - Applications : Small Parts, Vascular, Neonatal, Pediatrics
  - Probe Band Width : 3.5 – 9.5 MHz
  - Number of Element : 192
  - FOV (Max) : 39 mm
  - Physical Foot Print : 38 x 4 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : +/- 5, 10, 20°
  - Biopsy Guide Available : Multi Angle, Reusable

- 11L Wide Band Linear Probe
  - Applications : Small Parts, Vascular, Neonatal, Pediatrics
  - Probe Band Width : 3.4 – 13 MHz
  - Number of Element : 192
  - FOV (Max) : 38.4 mm
  - Physical Foot Print : 38 x 4 mm
  - B-Mode Imaging Frequency : 7.0, 10.0, 12.0 MHz
  - Harmonic Frequency : 10.0, 12.0, 13.0 MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : 0, +/- 5, 10, 15, 20°

- Biopsy Guide Available : Multi Angle, Reusable

- 12L Wide Band Linear Probe
  - Applications : Small Parts, Vascular, Neonatal, Pediatrics
  - Probe Band Width : 4.3 – 13 MHz
  - Number of Element : 192
  - FOV (Max) : 39 mm
  - Physical Foot Print : 38 x 4 mm
  - B-Mode Imaging Frequency : 7.0, 10.0, 12.0 MHz
  - Harmonic Frequency : 10.0, 12.0 MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : +/- 5, 10, 20°
  - Biopsy Guide Available : Multi Angle, Reusable

- i12L Intra-operative Wide Band Linear Probe
  - Applications : Intra-operative, Small Parts, Vascular, Pediatrics
  - Probe Band Width : 4 – 12 MHz
  - Number of Element : 96
  - FOV (Max) : 25 mm
  - Physical Foot Print : 25 x 7 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 10.0, 12.0MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : +/- 5, 10, 15, 20°
  - Biopsy Guide Available : None

- t739 Intra-operative Wide Band Linear Probe
  - Applications : Intra-operative, Small Parts, Vascular, Pediatrics
  - Probe Band Width : 3.5 -12 MHz
  - Number of Element: 192
  - FOV (Max) : 39 mm
  - Physical Foot Print : 39 x 5 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0, 12.0 MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : +/- 5, 10, 15, 20°
  - Biopsy Guide Available : Multi Angle, Reusable

- i739 Intra-operative Wide Band Linear Probe
  - Applications : Intra-operative, Small Parts, Vascular, Pediatrics
  - Probe Band Width : 4 – 12 MHz
  - Number of Element: 192
  - FOV (Max) : 39 mm
  - Physical Foot Print : 39 x 5 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0, 12.0 MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : +/- 5, 10, 15, 20°
  - Biopsy Guide Available: None

- BE9C Wide Band Biplane Micro-convex Probe
  - Applications: Urology, Endocavity
  - Probe Band Width : 3.9 – 11.4 MHz
  - Number of Element : 96 x 2
  - Convex Radius : 9 mmR
  - FOV (Max) : 127°
  - Physical Foot Print : 20 x 5 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : Single Angle Reusable (stainless steel), Disposable

- BE9CS Wide Band Biplane Micro-convex Probe
  - Applications: Urology, Endocavity
  - Probe Band Width : 3.9 – 11.4 MHz
  - Number of Element : 96 x 2
  - Convex Radius : 9 mmR
  - FOV (Max) : 127°
  - Physical Foot Print : 20 x 5 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : Single Angle Reusable (stainless steel), Disposable

- ERB Wide Band Biplane Probe
  - Applications: Urology
  - Probe Band Width:
    - ERB Linear : 3 – 15 MHz
    - ERB Convex : 3.5 - 11MHz
  - Number of Element: 128
  - FOV (Max) :
    - ERB Linear: 51mm
    - ERB Convex: 123°
  - Physical Foot Print:
    - ERB Linear: 51 x 5 mm
    - ERB Convex: 17 x 5.5 mm
  - B-Mode Imaging Frequency: 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency: 8.0, 10.0 MHz
  - Doppler Frequency: 5.0, 6.7 MHz
  - Biopsy Guide Available: Multi Angle, Grid Reusable

- 4D3C-L Convex Volume Probe
  - Applications : Abdomen, OB/Gyn
  - Probe Band Width : 2.0 – 5.0 MHz
  - Number of Element: 192
  - Convex Radius : 39.1 mmR
  - Volume Sweep Radius: 19.8 mmR
  - FOV: 87° Volume 85° x 80°
  - Physical Foot Print : 60 x 13 mm
  - B-Mode Imaging Frequency : 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency : 4.0, 4.5, 4.8, 5.0 MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - Biopsy Guide Available : Single Angle, Reusable (stainless steel, plastic)

- 4D8C Micro Convex Volume Probe
  - Applications : Neonatal, Pediatrics
  - Probe Band Width : 3.3 – 10 MHz
  - Number of Element: 192
  - Convex Radius : 14.0 mmR
  - Volume Sweep Radius: 80 mm
  - FOV: 120° Volume 37.4 mm x 29°
  - Physical Foot Print : 30 x 50 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0, 11.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : Single Angle Reusable(stainless steel, plastic)

- 4DE7C Convex Volume Probe
  - Applications : OB Gyn, Urology
  - Probe Band Width : 3.75 – 10 MHz
  - Number of Element: 192
  - Convex Radius: 10.1 mmR
  - Volume Sweep Radius: 11.6 mmR
  - FOV: 133° Volume 146° x 90°
  - Physical Foot Print : 27 x 6 mm
  - B-Mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0, 11.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : Single Angle, Reusable (stainless steel)

- P2D Non-imaging Single CW-Doppler Pencil Probe
  - Applications : Cardiac
  - Frequency: 2.0 MHz

- P6D Non-imaging Single CW-Doppler Pencil Probe
  - Applications : Cardiac, Vascular, Pediatric
  - Frequency: 5.0 MHz

Inputs and Outputs

- Video In
  - S-Video
- Video Out
  - S-Video
- Audio Stereo In
- VGA out
- Connectors
  - Footswitch
  - USB (6)
  - Ethernet
  - Power for Peripherals

Safety Conformance

The LOGIQ P5 is:

- Listed to UL 60601-1 by a Nationally Recognized Test Lab
- Certified to CSA 22.2, 60601.1 by an SCC accredited Test Lab
- CE Marked to Council Directive 93/42/EEC on Medical Devices
- Conforms to the following standards for safety:
  - EN 60601-1 Electrical medical equipment
  - EN 60601-1-1 Electrical medical equipment
  - EN 60601-1-2 Electromagnetic compatibility
  - EN 60601-1-4 Programmable medical systems
  - EN 60601-2-37 Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
  - IEC 61157 Declaration of acoustic output
  - ISO 10993 Biological evaluation of medical devices
  - NEMA UD3 Acoustic output display (MI, TIS, TIB, TIC)

Not all features or specifications described in this document may be available in all probes and/or modes.

General Electric Company reserves the right to make changes in specifications and features shown herein, or discontinue the product at any time without notice or obligation. Contact GE Representative for the most current information.

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