

## TECHNICAL SPECIFICATION USONICS A80 TOUCH



### SYSTEM OVERVIEW

#### Applications

ABD

Renal

ABD-Vascular

Ped-ABD(Pediatric abdominal)

GYN

OB

Fetal Heart

Urology

Prostate

Vascular

Carotid

P-Arterial(peripheral arterial)

Venous

Small parts

Thyroid

Breast

Testicle

MSK(Musculoskeletal)

Orthopedics

Cardiac



Ped-Cardiac(Pediatric cardiac)  
TCD(trans-cranial Doppler)  
EM(emergency)

## **BHL HEALTHCARE LTD**

Plot 40, Mackenzie Vale Road, Kololo, Kampala, Uganda  
Tel: 00256-41-4530600 Website: [www.bhlhealthcare.com](http://www.bhlhealthcare.com)

### **Imaging Modes**

B mode  
M mode  
Pulse Wave Doppler(PW)  
HPRF(High Pulse Repetition Frequency)  
Continuous Wave Doppler(CW)  
CDFI(Color Doppler Flow Imaging)  
Power(Power Doppler Flow Imaging)  
DirPower(Directional Power Doppler Flow Imaging)  
CM(Color M mode)  
TVM(Tissue velocity M mode)

### **Imaging features**

Trapezoid imaging  
Quad/Dual display  
B/C Live (B and color simultaneous comparison display)  
Duplex for simultaneous B and spectral Doppler  
Triplex mode for simultaneous B, Color/Power, and spectral Doppler  
Real-time Automatic Doppler measurement  
Multi-Angular compounding imaging  
Advance speckle removal imaging  
Advance 3D/4D imaging  
Panoramic Imaging  
Anatomic M-Mode(three line)  
Tissue Doppler Imaging  
Auto IMT(intima-media thickness)  
Elastography  
Ultrasound raw data archive

## **TRANSDUCER**

There are 3 active transducer ports for simultaneous transducer connection

C2-5/60E

- Application: ABD, Renal, ABD-Vascular, Ped-ABD, GYN, OB, Fetal Heart, Urology, Prostate, EM
- Frequency Bandwidth: 2-5.0MHz
- Center frequency: 3.5MHz



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- Field of View: 56 degree
- Depth: 45-380mm
- Radius: 59.4mm
- Trapezoidal imaging
- Biopsy guide available

### EC4-9/10E

- Application: Early OB, OB/GYN, Urology
- Frequency Bandwidth: 3.1-9.8MHz
- Center frequency: 6.5MHz
- Field of View: 148 degree
- Depth: 15-160mm
- Radius: 10mm
- Biopsy guide available

### L5-10/40E

- Application: Vascular, Carotid, P-Arterial, small parts, MSK, Orthopedics, ABD, EM
- Frequency Bandwidth: 4-11MHz
- Center frequency: 7.5MHz
- Field of View: 38.7mm
- Depth: 15-160mm
- Trapezoidal imaging
- Biopsy guide available

### C4-9/10E

- Application: Cerebrovascular, Neonatal Head, Pediatric Abdomen, Pediatric Echo
- Frequency Bandwidth: 3.1-9.8MHz
- Number of element: 128
- Center frequency: 6.5MHz
- Field of View: 155 degree
- Depth: 26-126mm
- Radius: 15mm
- Biopsy guide available

### P2-3/20AP

- Application: Cardiac, Ped-Cardiac, TCD, ABD, OB, EM
- Frequency Bandwidth: 1.9-4MHz
- Center frequency: 3MHz
- Field of View: 90°
- Depth: 45-310mm



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- Biopsy guide available

### 4C2-5N

- Application: ABD, GYN, OB
- Frequency Bandwidth: 2-5.0MHz
- Center frequency: 3.5MHz
- Sweep angle: 15 °-80 °
- Field of View: 65 degree
- Depth: 45-310mm
- Radius: 40mm
- Trapezoidal imaging

## **DETAIL SYSTEM SPECIFICATIONS**

### **System Architecture**

All-digital broadband beam-formers

4 transmit focal zones

Phase inverse Tissue Harmonic Imaging(PIHI)

Multi-Angular compounding imaging

Steering image(B, color and spectral Doppler modes)

Multi-frequency in B, color and Doppler imaging

### **Zoom**

Write(regional acoustic zoom) and read zoom

Zoom ratio: 12 times

For real-time and frozen images

### **Ergonomic Design**

Backlit and interactive task light control panel

Home based and function grouped design for control panel

One button quick image/spectrum optimization

Lighting of the keyboard controls

High quality stereo audio speaker system

Input and output connections on the rear panel

Front compartment for storage of accessories

### **Storage**

500GB integrated hard drive

DVD-R/W



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USB ports: 7 ports for data transportation

Images storage format: BMP, JPG, TIFF and AVI

DICOM storage, print, worklist, MPPS, SR, Q/R

### **Cineloop**

Support B, M, Spectral Doppler, Color, Power, DirPower

Simultaneous and independent review in duplex/triplex mode

Capacity:

--B: Maximum 3000 frames

--M, Spectral Doppler: 30s

## **IMAGE ADJUSTMENT**

### **2D MODE**

Up to three frequencies in Tissue Harmonic Imaging(probe dependent)

R/S: 4 levels(0-3)

Persist: 5 levels(0-4)

Dynamic range: 30-120dB, 5dB step

Rejection: 6 levels(0-5)

Smooth: 4 levels(0-3)

Tissue: General, Liquid, Fat, Muscle

Gain: 0-100%, 3% step

DGC/TGC: eight level

LGC: four level

Gray scale map: 16 types(A-P)

Thermal Index: TIC, TIS, TIB

2B, 4B and seamless dual screen formats

Invert(U/D) and transposed(L/R)

Focus Number: 4

Focus Depth: 8 levels(depth and probe dependent)

FOV: 5 levels

Image depth up to 31cm in 0.5-4cm increments(depth dependent)

Phase inversion harmonic imaging technique is available for all probes

### **M MODE**

Frequency: Up to 4 fundamental and 3 harmonic imaging frequencies

Edge enhancement: 4 levels(0-3)

Rejection: 6 levels(0-5)

Dynamic range: 30-120dB, 5dB step

Gain: 0-100%, 3% step

Gray scale map: 16 types(A-P)

Colorize: 16(0-15)

Sweep speed: 5 levels(1-5)

Display format: V1:1, V1:2, V2:1, H2:3

### **SPECTRAL DOPPLER MODE(PW)**

Gain: 0-100%, 3% step  
Frequency: 2 levels  
Sweep speed: 5 levels(1-5)  
Rejection: 6 levels(0-5)  
Gray scale map: 8 types(A-H)  
Colorize map: 12 types(0-12)  
Dynamic range: 30-60dB, 5dB step  
Wall filter: 5 levels(0-4)  
Angle correction: -89+89, 1 step  
Auto angle correction: 0, +60, -60  
Gate size: 13 levels(0.5-20mm)  
Invert: On, Off  
Triplex/Duplex: On, Off  
Baseline: 17 levels  
Real-time auto Doppler trace and calculation  
Display format: V1:1, V1:2, V2:1, H2:3  
Velocity Scales: 0.15cm/s-1025cm/s(angle 60)  
PRF range: 4.46 to 25 kHz

### **SPECTRAL DOPPLER MODE(CW)**

Gain: 0-100%, 3% step  
Sweep speed: 5 levels(1-5)  
Rejection: 6 levels(0-5)  
Gray scale map: 8 types(A-H)  
Colorize map: 12 types(0-12)  
Dynamic range: 30-60dB, 5dB step  
Wall filter: 5 levels(0-4)  
Angle correction: -89+89, 1 step  
Quick angle correction: 0, +60, -60  
Invert: On, Off  
Triplex/Duplex: On, Off  
Baseline: 17 levels  
Real-time auto Doppler trace: maximum velocity, mean velocity  
Display format: V1:1, V1:2, V2:1, H2:3  
Velocity Scales: 0.15cm/s-3500cm/s(angle 60)  
PRF range: 4.46 to 62.5 kHz

### **COLOR DOPPLER MODE**

Frequency: 2 levels  
Gain: 0-100%, 3% step  
Wall filter: 5 levels(0-4)  
Sensitivity: H, M, L



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Flow: H, M, L  
R/S: 4 levels(0-3)  
Priority: 5 levels(0-4)  
Smooth: 4 levels(0-3)  
Persist: 5 levels(0-4)  
Invert: On, Off  
Baseline: 13 levels(-6~6)  
Peak: 1 sec, 2 sec, 3 sec, off  
Color Map: 8 types(A-H)  
Color/PDI Width: 20%, 30%, 40%, 50%, 60%  
Color/PDI Height: 0.5-12cm(probe dependent)  
Color/PDI Center Depth: 1-16cm(probe dependent)  
Steer: +/-10 °, 20 °(linear probe)  
PRF range: 150Hz to 12 kHz

### **POWER DOPPLER MODE**

Frequency: 2 levels  
Gain: 0-100%, 3% step  
Wall filter: 5 levels(0-4)  
Sensitivity: H, M, L  
Flow: H, M, L  
R/S: 4 levels(0-3)  
Priority: 5 levels(0-4)  
Smooth: 4 levels(0-3)  
Persist: 5 levels(0-4)  
Peak: 1 sec, 2 sec, 3 sec, off  
PDI Map: 8 types(A-H)  
Color/PDI Width: 20%, 30%, 40%, 50%, 60%  
Color/PDI Height: 0.5-12cm(probe dependent)  
Color/PDI Center Depth: 1-16cm(probe dependent)  
Steer: +/-10 °, 20 °(linear probe)  
PRF range: 150Hz to 12 kHz

### **CONFIGURATION**

#### **Monitor**

19-inch color LCD monitor  
8.4-inch touch screen  
Omni directional mechanic arm  
Wide view angle of 170 degrees  
1280\*1024 resolutions



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### **Footswitch(option)**

Two pedals

Allows Freeze and Print or user-define function

Water resistance

### **PERIPHERAL SIGNALS**

<b>Signal</b>	<b>In/Out</b>	<b>Description</b>
DVI	O	1 port
Video	O	1 port
S-Video	O	1 port
Remote		1 port
Audio	I/O	2 ports
Ethernet		1 port
USB 2.0 port		7 ports(1 on the control panel)



