

## Self Teaching, Testing and Bedside Instruction

### Self Teaching & Testing System

For self-teaching and testing, the Cardionics/UTMB Auscultation Self-Teaching System (STS) guides the student to proficiency in cardiac auscultation with a series of five computer lessons, an auscultation evaluation program and a workbook. Students listen with their own stethoscope and palpate the carotid pulse. Developed and tested at the University of Texas Medical Branch in Galveston, STS instructs and tests students at their own pace with minimal instructor time. During its use at UTMB, a three fold improvement in proficiency was noted.

### Learning Cardiac Auscultation - Interactive CD-ROM

For self-teaching and testing, the *Learning Cardiac Auscultation* CD-ROM presents the most requested 24 heart sounds and their variations along with a phonocardiogram, ECG, Text, Labels, a Novice and Advanced quiz and more. Sound components and murmurs can be increased, decreased or muted and two sounds (e.g. MS+MR and AS+AR) can be compared with a few mouse clicks. Instructors assign quizzes to individual students; results are scored, saved and can be printed.



SimulScope with SAM, the Student Auscultation Manikin for group instruction

### SAM, the Student Auscultation Manikin

Self-teaching, instructor teaching and testing, is provided with SAM's 24 Heart Sounds and Murmurs, 20 Breath Sounds, 20 Bowel Sounds and 4 carotid bruits all heard at the correct anatomical sites. A carotid pulse is palpated with all Heart Sounds. Special Heart Sound Testing Modules are available for testing and exam preparation.

### SimulScope® Bedside Auscultation System

For bedside teaching, the SimulScope is a small, portable, battery-operated, and wireless infrared transmitter that saves time at the bedside with minimal patient disturbance. The instructor and students hear sounds simultaneously with wireless HeartMan Infrared Headphones. The SimulScope can be used for group instruction with SAM as shown above, at the bedside or in telemedicine applications.

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# CardioSim VII

## Digital Heart Sound Simulator

### Teach & Test Auscultation Skills



Portable Model CardioSimVII

- Simulated sounds
- Real patient sounds
- Display phono, ECG, carotid/apical pulse
- Murmur/click position movement
- Normal breath sounds for added realism
- Save lecture protocols
- Patient auscultation - listen, display, digitally record, save, add to lecture - both sound, ECG & Pulse

Proven Systems for:

**Classroom or Auditorium Instruction**

**Bedside Teaching**

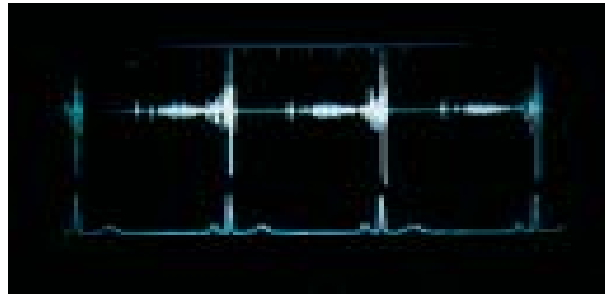
**Self-Instruction**

**& Testing**

- Add sounds from patients
- Add slides, animations or images to lecture
- Wireless Infrared Sound Systems
- Large screen projection
- Auscultation Skill Evaluation



## Classroom or Auditorium Instruction & Testing



### RealPatient Sounds

After listening to simulated heart sounds, the student can hear several examples of the same sound from real patients. These real sounds demonstrate how the sound changes with varying degrees of illness. For example, the instructor or student can play mild, then moderate, then severe mitral stenosis from the Real Sounds Library.

### Simulated Sounds

The CardioSim allows instructors and students to listen repetitively to all or any part of a complex heart sound. While listening, murmurs, clicks, etc. can be added, removed, amplified and/or attenuated so the student learns to recognize each sound.

### PneumoSim Digital Breath Sound Simulator

The optional PneumoSim Digital Breath Sound Simulator operates in a manner similar to the CardioSim System. Wheezes, crackles, rubs, etc. can be added to any part of inspiration or expiration. I-E ratio, position of adventitious sounds, pause, breathing rate and more are easily controlled or changed to illustrate disease progression. Various conditions such as asthma, emphysema, atelectasis, etc. are included.

### Veterinary Sounds Option

For Veterinary Medicine, the optional VetSim Digital Veterinary Sound Simulator offers a special menu of heart sound programs. With these programs, the instructor or student has the ability to control both heart and respiration rates independently and at rates higher than found in humans.



Cabinet Model CardioSim VII Digital Heart Sound Simulator

# CardioSim VII

## Digital Heart Sound Simulator



### Wireless Auditorium

### Infrared Sound System

With wireless Heartman Infrared Headphones, as many as 1000 or as few as one will hear clinically realistic sounds with complete clarity. HeartMan Headphones fit and seal ears just as your stethoscope. An optional Voice-Over System sends the instructor's comments to the HeartMan Headphones.



### Lecture Protocol

Eight instructors can each prepare and save eight lectures. With up to 99 steps, each lecture is a combination of simulated and/or real sounds, instructor's recorded patient sounds, animations, slides and images.

### Click or Murmur Manipulation & Frequency Selector

Clicks, murmurs and other sounds can be repositioned to illustrate the effect of posture change or disease progression. For instance, the systolic click of mitral valve prolapse can be moved to late systole to illustrate the effect of squatting. The frequency of any sound or murmur can be changed with the built-in frequency sound selector.

### Patient Auscultation Unit

Interesting patient sounds can be displayed, recorded, digitized and save in the CardioSim system for later display and study. The patient's ECG and pulse wave can be displayed with the phonocardiogram, if desired. Filter controls provide a noise-free phonocardiogram display.

