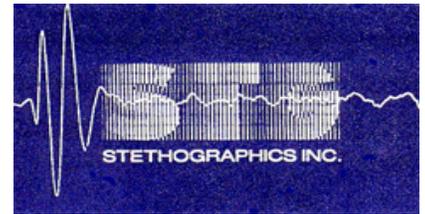# Stethographics
# Handheld STG

## Overview

The Stethographics Handheld STG is a portable, fast means to capture, play and analyze chest sounds. The device is fully compatible with normal auscultation, providing the physician with additional objective information as a complement to the subjective information from auscultation; particularly effective in evaluating heart illnesses, pneumonia, asthma and chronic obstructive pulmonary disease.

## Benefits

By using STG for PC, medical professional can:

- Visualize chest sounds, improving auscultation accuracy
- Quantify crackle counts and wheeze rates, allowing more precise evaluations
- Print, email or archive chest sound analysis for longitudinal patient tracking
- Examine specific sounds more closely, thereby aiding diagnosis

## Complete Handheld System

### Lightweight, Mobile Device

The Handheld STG consists of a Windows Powered Pocket PC, an electronic stethoscope and Stethographics STG software. This mobile system provides all of the functions needed to record, visualize and analyze lung and heart sounds. Weighting just 8 oz., it can be worn on a belt or carried in a pocket. The STG is designed to accommodate most brands of electronic stethoscopes. The Handheld STG can be purchased as a software kit or with an electronic stethoscope. Each system includes the Stethographics STG software for recording, visualizing, analyzing and saving heart and lung sounds. These features are described in the sections below.
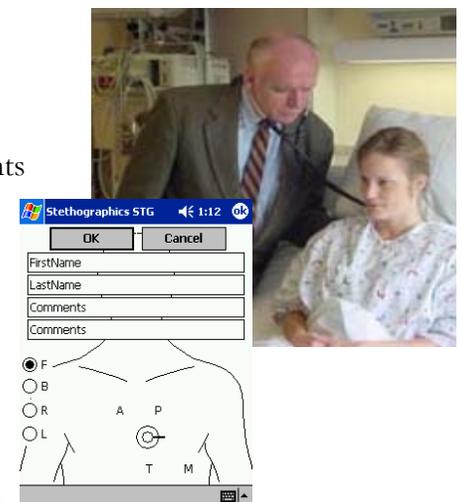
## Patient Record, Sound Capture and Storage
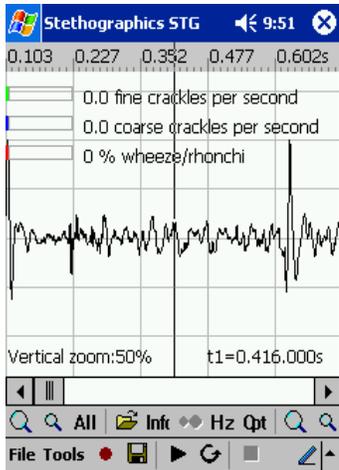
### Capturing, Storing and Patient Tracking

An important feature of the STG system is the correlation of lung sounds with patient records. Physicians and nurses can enter patient name, optional comments and the location of the chest piece for each recording. Each 20 second heart or lung sound is recorded and identified with the patient and the location of the chest piece.

These sound recordings are stored on the Pocket PC for reference during the examination or afterwards. The files can be emailed to colleagues using the standard email software in the Pocket PC. Using the included Microsoft synchronization software, patient recordings can be uploaded to a PC.

# Lung Sound Display and Analysis

## *Automated capture, display and playback of sounds*

The Handheld STG allows simultaneous visual and audible detection of the normal and abnormal sounds. The sound recording system has a frequency filter which can tune the system for lung or heart sounds. These sounds can be displayed, recorded and played back, for each auscultation position.
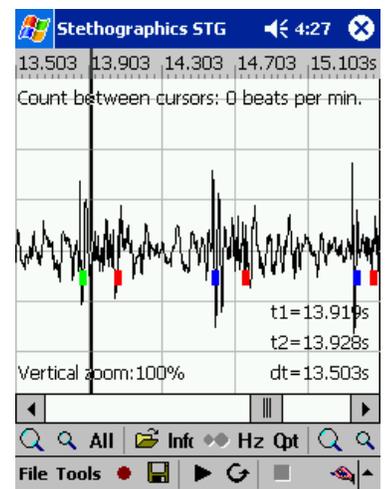
STG software allows for closer looks into specific sounds. For example, is can be used to determine if a patient's short wheeze due to asthma or is a squawk caused by pneumonia or hypersensitivity pneumonitis. As a check on the physician's interpretation, the STG counts fine and coarse crackles, wheezes, and irregular patterns of inspiration and expiration. These counts are displayed on a bar chart and the waveform is marked accordingly. The spectrum (spectra density), of the sound recording can also be displayed by selecting a toolbar icon.

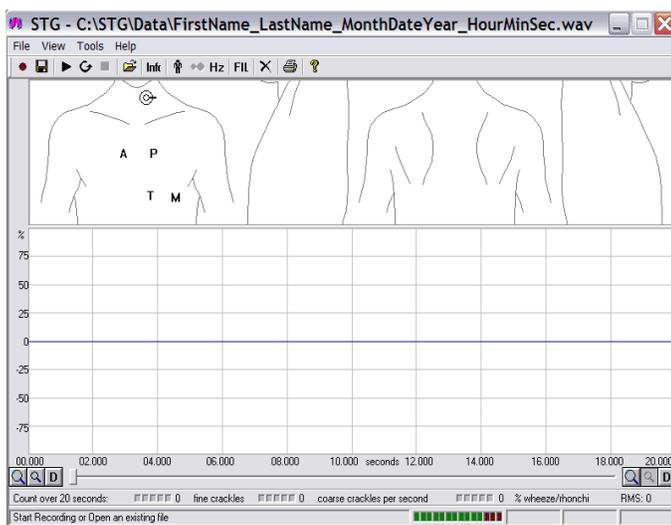# Heart Sound Display and Analysis

## *Phonocardiogram displays*

For heart sounds, a phonocardiogram is displayed in real time. Sounds can be filters using bell, diaphragm or extended ranges, a feature which is similar to electronic stethoscopes. The display can be controlled in both sound amplitude and in the time axis.

Phonocardiograms can detect conditions that can be missed by echocardiograms and by eliminating the expense and time for some echo tests. For example, fourth heart sounds provide a direct indication of possible diastolic dysfunction.

# Desktop PC Viewer

## *Longitudinal Studies and Recording Storage*

The Handheld STG comes equipped with a docking station that establishes data communications between STG and a Windows PC. Using this connection, patient recordings can be moved from the Handheld STG to a user's PC.

With the recording files on the user's PC, three significant functions are facilitated. First, the recordings can be permanently stored on the hard drive, burned to a CDROM or printed. Second, selected recordings can be emailed. Finally, the recordings can be viewed on the desktop using the companion STG Desktop PC Viewer.