

PCP-SSP Stethoscope Signal Processing Software Overview

PCP-SSP software is a new and simplified version of RNK's popular Auscultation Anywhere telemedicine stethoscope software. The new version provides a significant enhancement as it enables the stethoscope audio stream to be integrated into the video conferencing system's audio channel, thereby avoiding new networking and firewall traversal issues. Further, it can be used on many different video conference platforms and is fully FDA approved for telemedicine.

Background

The full version of the Windows based sSOIP software is comprised of two major components – 1) stethoscope signal processing and 2) network connectivity. Many users, however, would prefer the stethoscope signal to be carried over the same network connection set up by the video conferencing instead of a separate channel. The new software release enables that capability by creating a stethoscope stream that includes the stethoscope signal processing and that integrates into the audio stream of a video conferencing system. Thus, both the stethoscope signal and room audio will go over the audio channel of the video conferencing system and a separate audio channel for the stethoscope is not required.

FDA Clearance

All electronic or digital stethoscopes are not telemedicine stethoscopes. If any of the stethoscope signal processing (analog-to digital conversion, encoding, filtering) is performed by the PC or other component of the telemedicine system, then those elements are classified by the FDA as accessory elements to the stethoscope and must have FDA 510(k) clearance.

Using the same stethoscope signal processing software already approved under sSOIP, PCP-SSP meets the FDA 510(k) requirements as a Class II Medical device relating to the stethoscope in telemedicine applications.

Technical

PCP-SSP selects the PCP-USB signal output from the PC's Sound software. It presents a selection of filter options to help a clinician focus on heart versus lung sounds, plus it enables the stethoscope signal to be fed back to the headset port so the nurse or tech with the patient can hear the sounds (Local Monitor mode). PCP-SSP has a virtual driver that appears as another audio input to the PC's Sound software. The video conferencing software selects that as one of its audio inputs, adding to the room microphone selected for the video conferencing sessions.

Features

The software is unlike previous versions in that it needs to be installed on the patient end only and integrates the stethoscope data stream into the audio channel of the VC platform. Using this software completely eliminates any new network issues related to ports, network traversal or firewall rules when installed since it achieves transport on the user's video conference platform where all those issues have already been sorted out.

To use it, the video conference is initiated from either the physician or patient site and, when it is time to do the auscultation, the tech or nurse on the patient side simply clicks on the icon and the stethoscope “on” button and the stethoscope sounds are transmitted over the video conference audio channel. The pop up screen seen on the patient end has simple click points, one for turning the stethoscope streaming on or off, a pull down menu for sound filtering selections and a check box for local monitoring. The room mic of the videoconference is muted automatically when the stethoscope software is started to avoid against any ambient room noise.

Some key features of PCP-SSP are:

- Simple installation on patient side only
- Extremely minimal training required for use
- Minimizes IT Concerns - No new issues with network ports or firewall traversal – Everything is through a channel already in place for video conferencing
- Because the signal transport vehicle is the video conference system, physician side endpoints are not limited to windows platforms if the VC system has cross platform capabilities – Successful testing has been done with iPhones and iPads on the physician end with several popular desktop videoconference platforms
- Physician listens to stethoscope within video conference – no software training required – listens with headset and instructs nurse on filter setting changes
- No Physician side license fees or charges
- Patient side:
 - Monitoring feature for local listening
 - Filtering for Heart and Lungs (No Filter, 250 Hz, 500 Hz, 800 Hz, 1000 Hz, Lungs)
 - Auto muting of room mic while conducting auscultation
- One-time software license fee on patient side – No recurring charges
- Excellent Quality Sound
- FDA approved for telemedicine

Note: This software works only with the PCP-USB stethoscope. It is not compatible with the PCP-1 Mic Port stethoscope used by some customers.

Note: Both the sSOIP Auscultation Anywhere full version software and the newer PCP-SSP software will continue to be supported as will the PCP-1 Mic Port stethoscope.