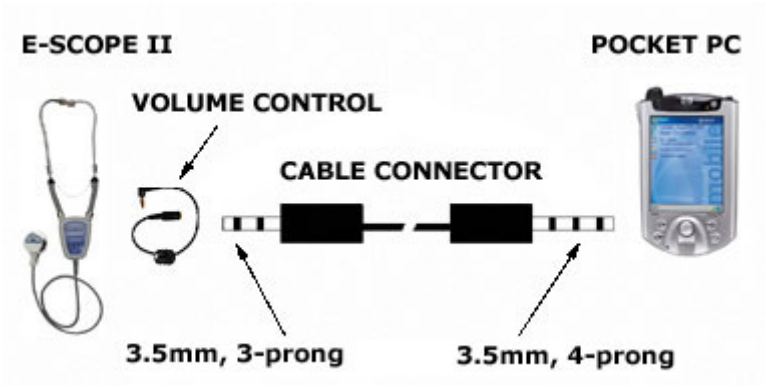
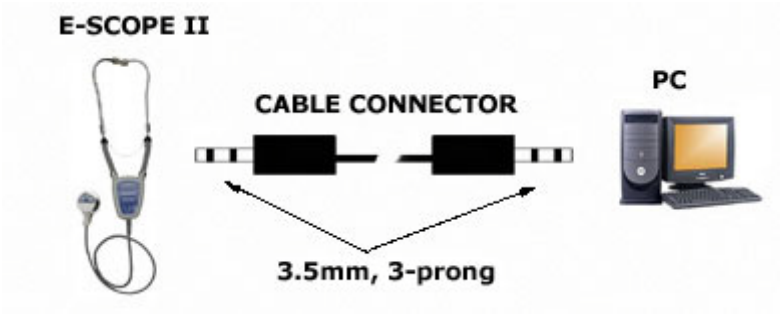
Cardionics E-Scope II

The E-Scope II from Cardionics is an amplified (up to 27db) electronic stethoscope with selectable frequency response for heart or breath sounds using a chestpiece button. In addition to binural output, the electronic audio output can be used with headphones, Handheld STG or a PC running STG software. This stethoscope is unique in offering adult and pediatric diaphragms as well as adult, pediatric and infant bells.





iPAQ settings:

1. Tap **Start > Settings > System Tab > iPAQ Audio > Microphone AGC** Tab.
2. Disable **Automatic Gain Control**.
3. Set Microphone Gain to **-3**.
4. Tap **OK**.
5. Tap **Start > Settings > System Tab > Backlight > Battery Power** Tab.
6. Adjust **'Turn of backlight if device is not used for'** to **3 min**.

Connecting E-Scope to iPAQ:

1. Assemble cable as shown on illustration above.
2. Connect volume control male to the eScope.
3. Connect 4-prong male to the iPAQ.
4. Rotate volume control to maximum volume.
5. Insert earpieces in to ears. Turn on eScope. Gently tap the diaphragm. If you don't hear the taps, the stethoscope is not functioning properly. If you hear the taps, proceed to step 6.
6. Start recording with the STG software.
7. Gently tap the diaphragm. If you don't see sharp spikes occupying all vertical space of the screen, disconnect and reconnect iPAQ cable from the iPAQ until you see spikes. The spikes will appear when iPAQ switches to record from external microphone.
8. Firmly position stethoscope and rotate the wheel on the volume control until maximum sound deflections occupy just below 50% of the vertical screen size.

Audio Gain:	27 dB @ 200 Hz (SPL/SPL). Peak output for both heart and breath sounds.
Frequency	Selectable between heart sounds (HS) and breath sounds (BS) via button on stethoscope head.

response:		
	Heart sounds:	100-240 Hz (-3dB) SPL/SPL 45 to 900 Hz (-20dB)
	Breath sounds:	125 to 350 Hz (-3dB) 50-2000 Hz (-20dB)
Maximum output:	124 dB SPL, undistorted	
Microphone:	Sound pressure type with electric microphone element located in chest piece.	
Speaker:	Dynamic type with 180 ohm impedance located in enclosure	
SOUNDS OUT:	Audio output with capability to drive 32 ohm headphone or Cardionics stethophone.	
Mechanical	***Weight:***	6.2 oz. (176 grams)
	Length:	38 inches (96.5 cm) from chest piece to binaural earpieces
Controls:	***Volume***	Up/down volume controls are located on the stethoscope head. Pressing any button will turn the E-Scope on.
	Restart	Pressing any button will turn the E-Scope on and remember the previous volume settings. The E-Scope will shut off automatically 2 minutes after any key press.
	HS/BS	Filter select is located on the stethoscope head and changes between heart and breath frequencies.
Battery	One AAA battery can power the E-Scope II for approximately 6 months at 6 hours usage per week or 30 uses per day.	

Recording techniques:
Holding a chest piece by hand often generate artifacts that make visual display unreadable. If you have this problem (and most people do), we suggest that you attach the chest piece to skin so that you do not need to hold it. There are several attachment methods you can use:
1. Just place the chest piece on bare skin. If the chest piece is heavy enough it will stay in place.
2. Attach the chest piece with 3M Double Stick Discs (SKU B11687). You can order it here: 3M Double-Stick Discs pack of 102 Size 1 1/4" 3M SAS2349 (HC) 3M 2181 (Pack).
3. Use a rubber belt to hold chest piece in place. We prefer maternity belt used to hold a doppler monitor in place when the hospitals want to hear the fetal heartbeat for an extended time. It's made of very soft, pliable and stretchy material. You can order it here: www.utahmed.com, Toco Abdominal Belts, Model ABC-4425