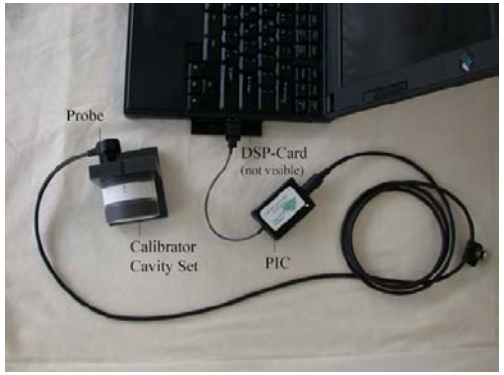
Wide Band Reflectance
WBR



Hardware

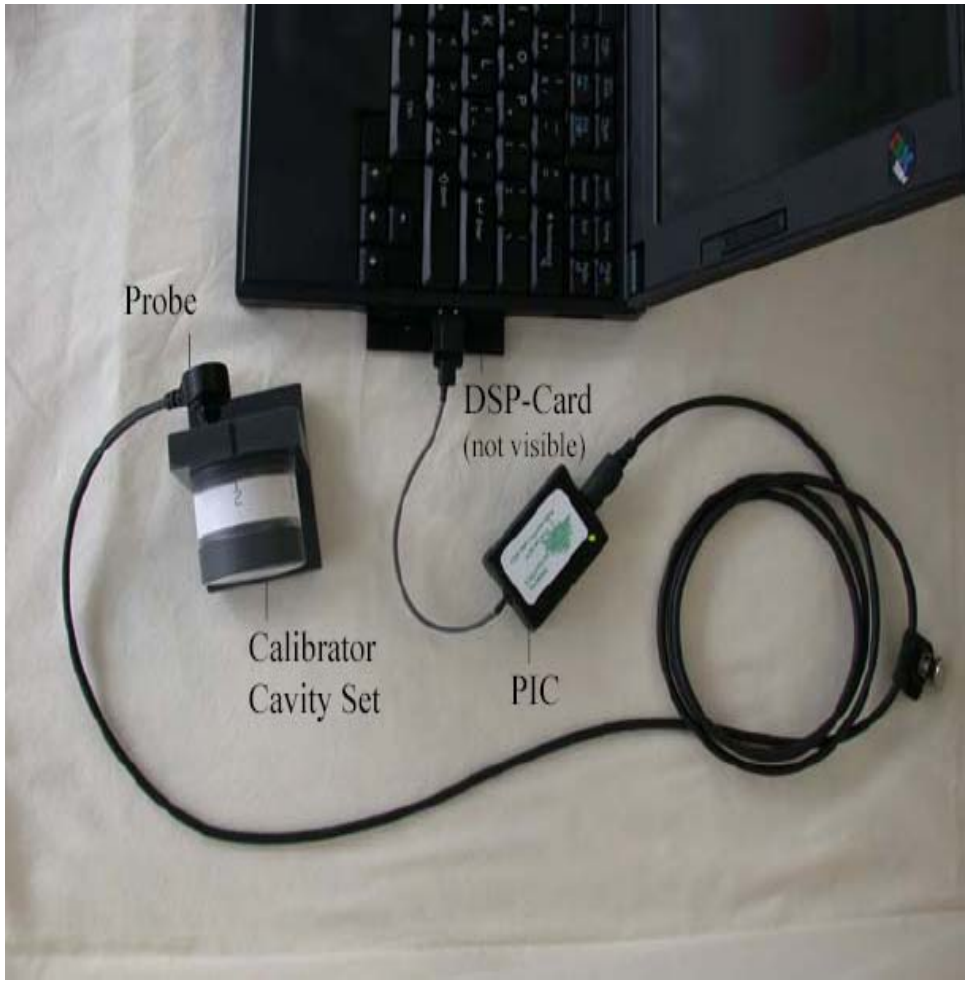
- A laptop or desktop computer with PCMCIA driver/adapter
- **PC Board:** A type II PCMCIA card for audio data acquisition and delivering, and for digital signal processing.
- Probe Interface Cable (PIC): The PIC connects the probe to the PC board. It also functions as the pre-amplifier for the probe.
- **ER-10CP Probe:** Is an acoustical probe (same as DP-2000) with two output transducers, and one input transducer (microphone).

Computer Requirement

- IBM compatible computer with an available PCMCIA Type II slot
- The computer should be placed at a distance of 1.5 meters or greater from the patient)
- Windows 95, 98, 98 Second Edition, ME, 2000, or XP operating system
- 8MB RAM
- 75 MHz in a 486DX or Pentium machine
- Color screen

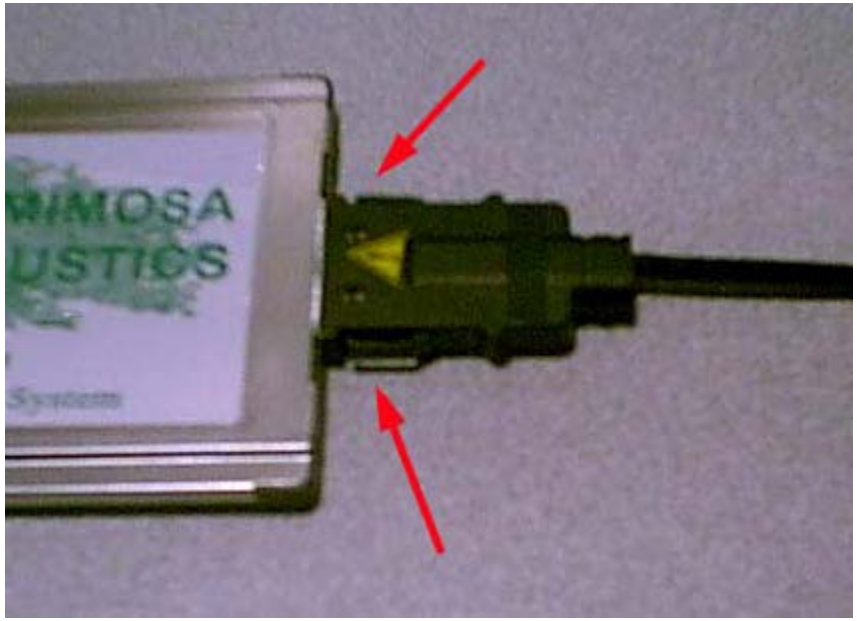
Setting Up the Hardware

- **Inserting PCMCIA Card:**
  - Insert the PC card into the PCMCIA slot, also called PC card slot, of the computer. (There is no need to turn off the computer.) The location of the PCMCIA card slot varies between computers. Check your user's manual for the exact location of the PCMCIA slot.
  - The front of the PC card, labeled "Mimosa Acoustics" should face up. The side of the PCMCIA card with the PIC connector port should face outward. Insert the PCMCIA card into the PCMCIA card slot and push it in place firmly.



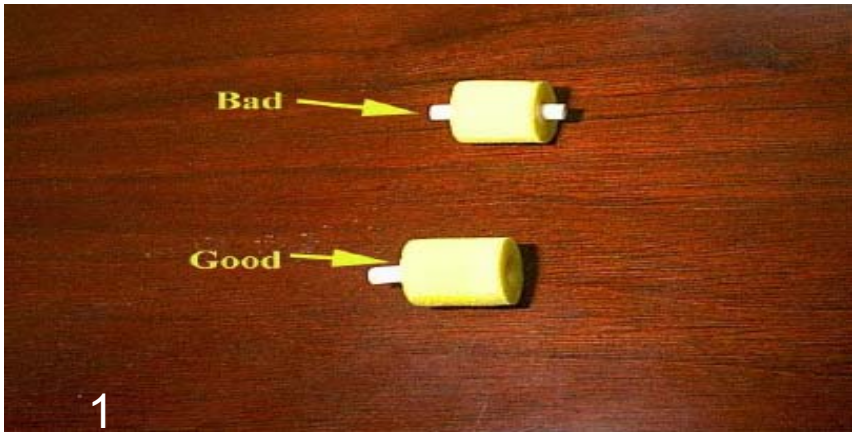
Setting Up the Hardware

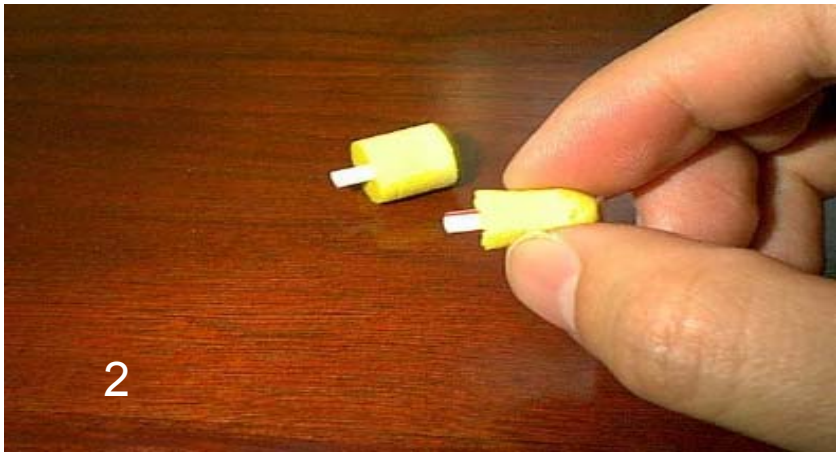
- **Inserting Probe Interface Cable (PIC):**
  - Insert the PCMCIA card connector of the PIC into the PCMCIA card. Once inserted the green L.E.D. on the front of the PIC will illuminate. If the light does not come on, check the configuration of the PC card and try to restart the computer with the PCMCIA card inside the PC card slot.
- **Connect the Acoustic Probe:**
  - Plug the seven-pin DIN connector of the probe into the seven-pin DIN socket of the PIC. Make sure that the pins are aligned properly.

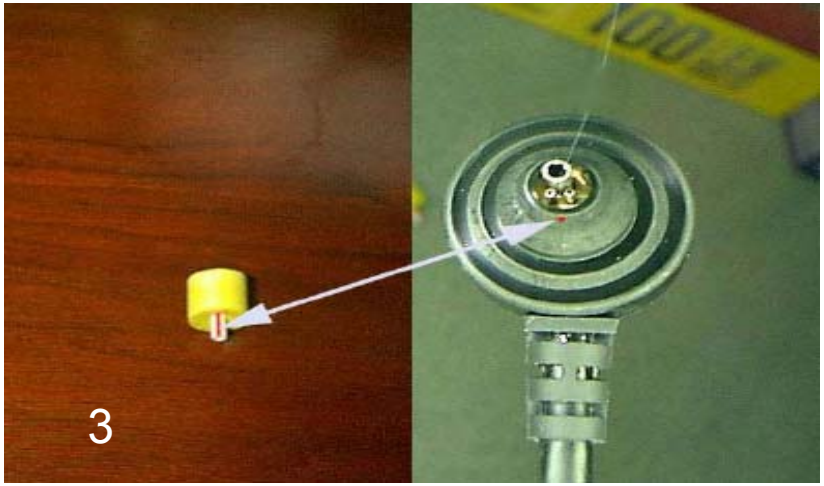


Ear Tip Installation

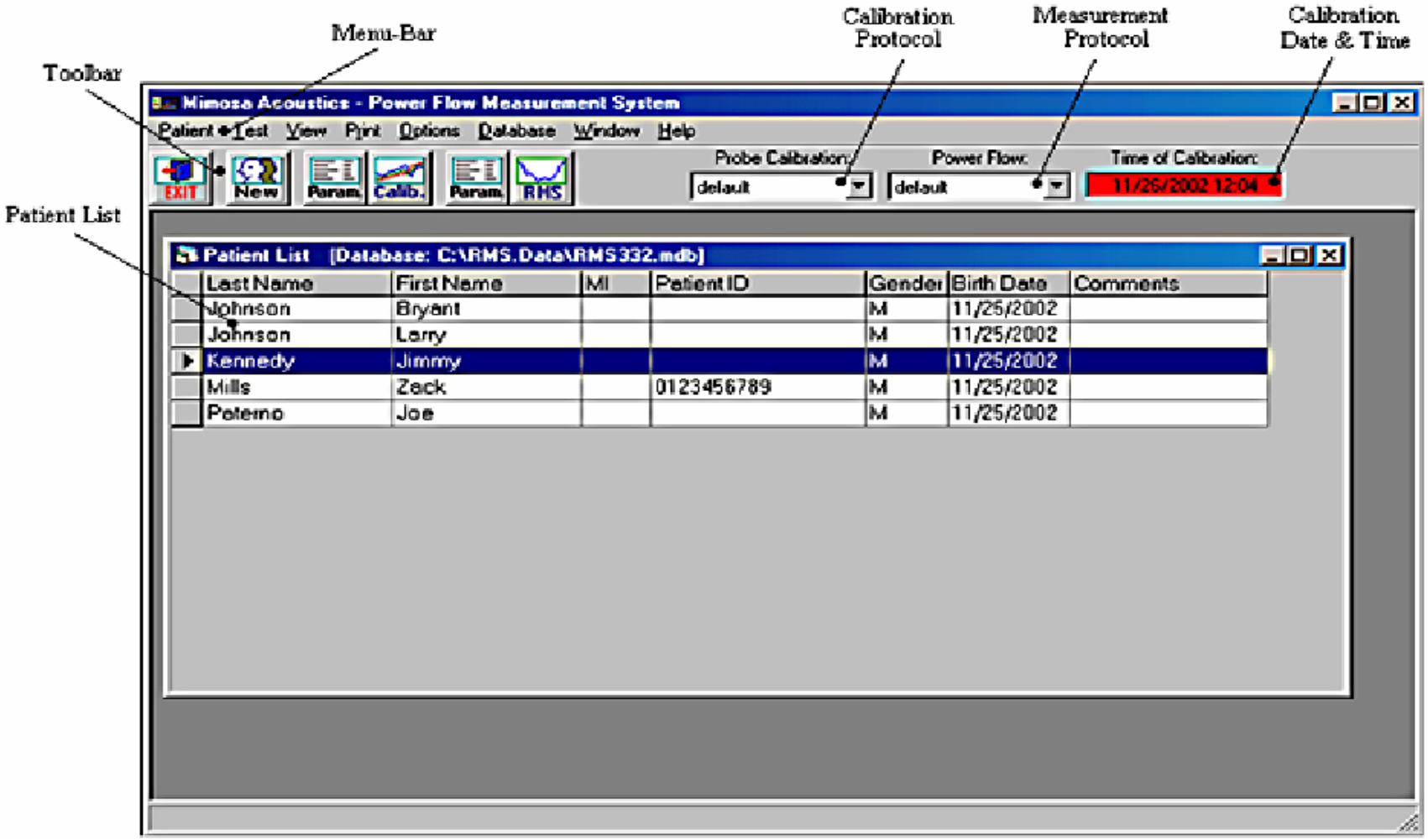
- **To obtain an accurate reading with your measurement system, it is absolutely essential that you insert the ear tip onto the probe properly.**
  1. Select the desired ear tip size. The plastic tube should be flush with the front-edge of the ear tip as shown in the picture on the right. If it is not, change the ear tip and inform your distributor. Do not use a bad ear tip to conduct measurements.
  2. Before inserting the ear tip onto the probe, gently push the front-edge of the foam backwards. This is done so that the foam will maintain its proper shape later when squeezed. Roll the foam between your index finger and the thumb to decrease the diameter of the foam.
  3. You **must** line-up the red line on the ear tip with the red dot located on the probe. This is extremely important because there are two small receivers on the probe that should be properly inserted into the plastic tube.







Program Interface



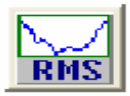
Program toolbar

- Quits the measurement program

- Adds new patient demographic information

- Displays the calibration & test parameter window

- Initiates a probe calibration



- Initiates a power flow test session

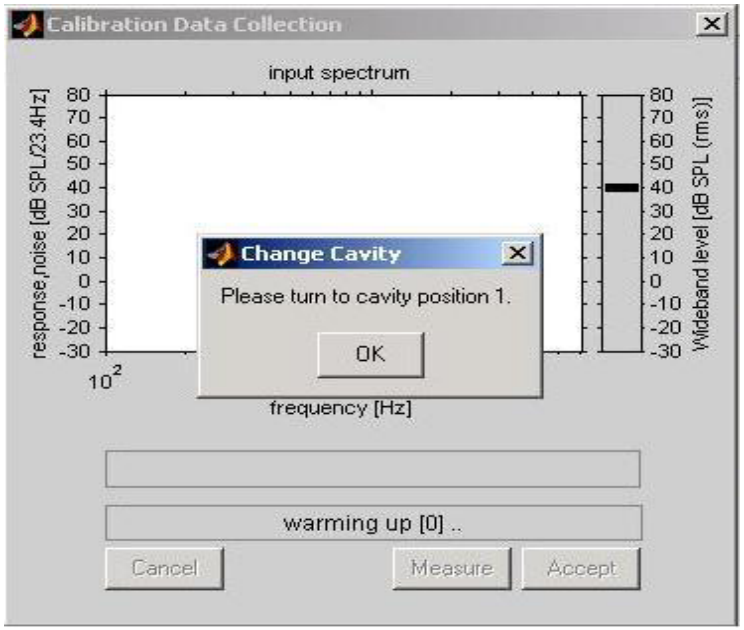
- Sets the current probe calibration protocol

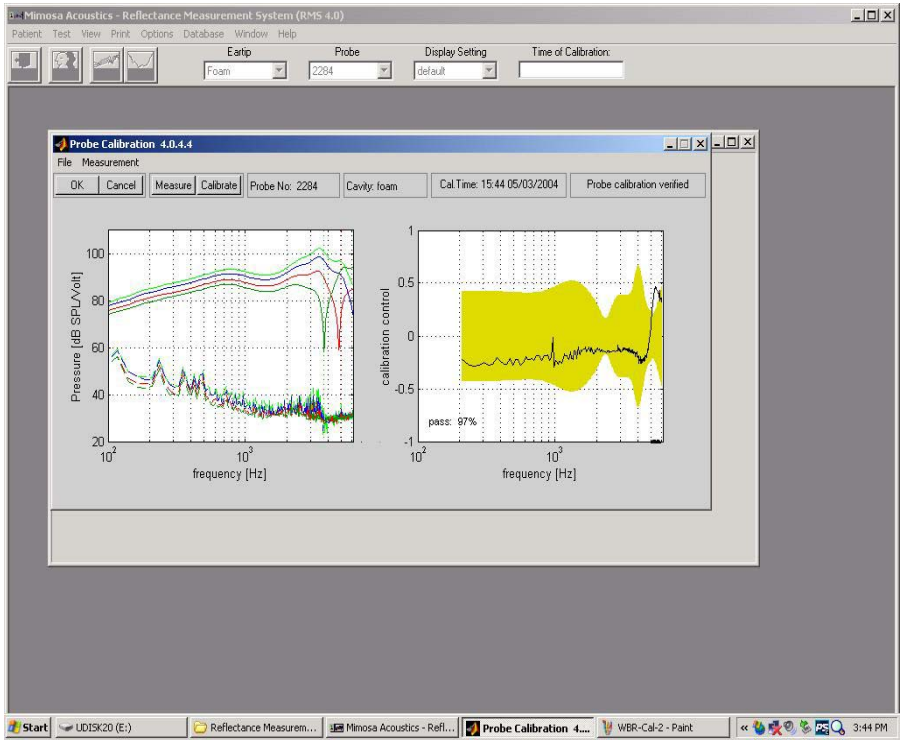
- Sets the current test protocol

- Displays the date & time of the current probe calibration

Calibration

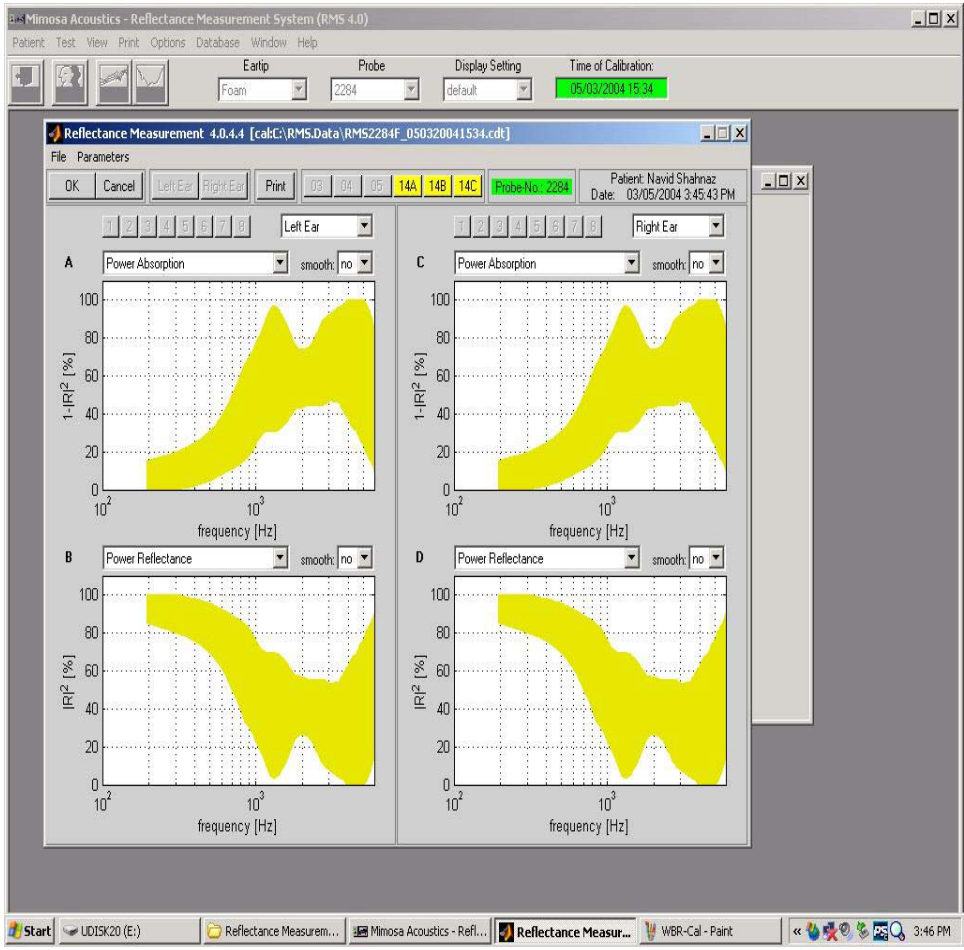
- Prior to conducting a calibration, make sure that the DSP board, PIC and the probe are connected properly. Verify that the green LED of the PIC is on and an ear tip is properly placed on the probe and inserted into the calibrator at the “Zero” setting.
- While the Patient List window is being displayed, The **Calib.** button on the toolbar, the [SPACE] key, or selecting *Test*, *Calibration*, *New Calibration* from the main menu-bar will all initiate a new probe calibration.
- Click on the **Measure** button to start the measurement. A message “Please turn to cavity position 1” will appear briefly on the screen, therefore it is not necessary to click the **OK** button to exit the message. Click on **Measure** to obtain data for each of the four cavities provided by the manufacturer.
- After all four cavities have been measured and accepted, click on the **Calibrate** button and the program will compute the lengths of each cavity and other calibration data and if it falls within the yellow shaded area the calibration is verifies. Click on **OK** to save the calibration.





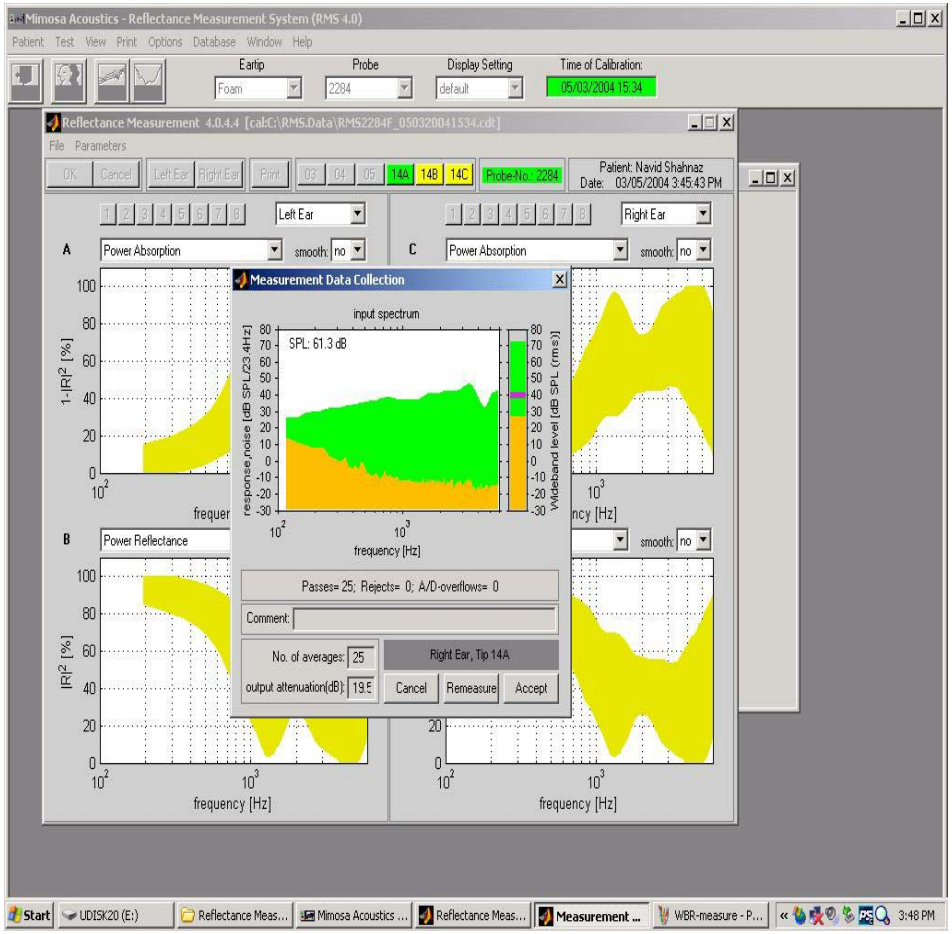
Taking Measurements

- Select *RMS* from the main menu-bar to open the power flow measurement window.
- If the calibration was conducted properly, the calculations should yield a valid result and this is indicated by a green color;
- Select appropriate probe tip size (14a, 14B)



Taking Measurements

- Click either the **Left Ear** or the **right Ear** button will open another small window.
- Clicking on the **Measure** button will initiate the actual test measurement for that ear.



Taking Measurements

- Up to eight different measurement can be taken for each ear. Clicking on the buttons numbered from 1 to 8 will toggle to show/hide that particular measurement.
- Click on **OK** to save all of the measurements and exit the window, or click on **Cancel** to exit the measurement window without saving any of the measured data.