

Operating Instructions of audiometer

All the connection jacks can be found on the rear side of the MA 33. All the cables and accessories should be connected before the instrument is switched on.

A = Bone Conduction Headphone

B = Air Conduction Headphone (Red Plug)

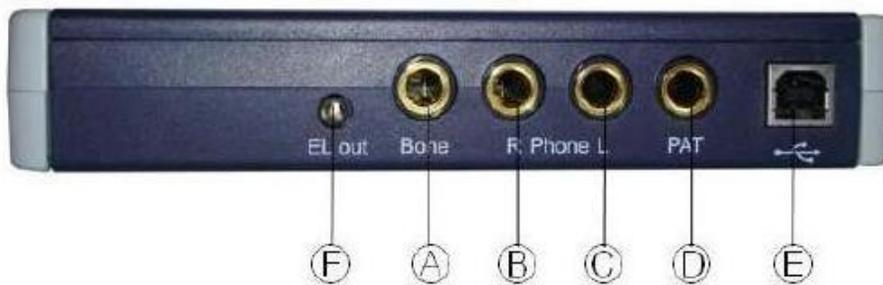
C = Air Conduction Headphone (Blue Plug)

D = Patient Response Key

E = USB Connector

F = no function

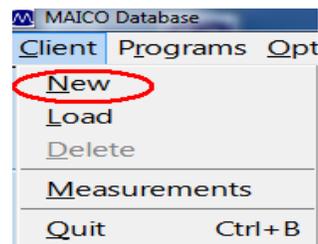
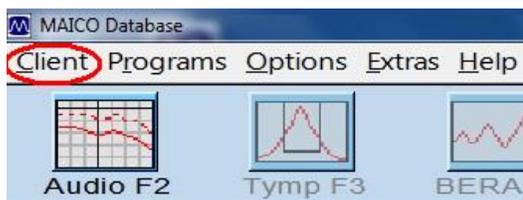
LEDs on the front: The right LED indicates the operating state, the left LED shows the starting sequence.



1. Switch on PC. After starting press the icon **MaicoDatabase** on Desktop.



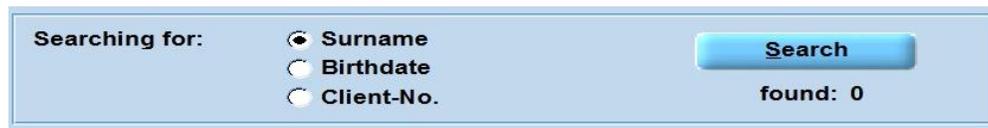
2. On the upper toolbars press **Client**→**New** (New patient). The window with identification information about the patient is opened. You have to fill the patient name, surname and date of birthday. Another data are not compulsory.



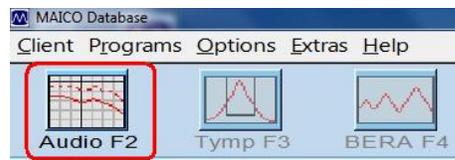
- After filling data press the **Save** button. The software automatically aligns the identity number to the patient – **Client-No.**



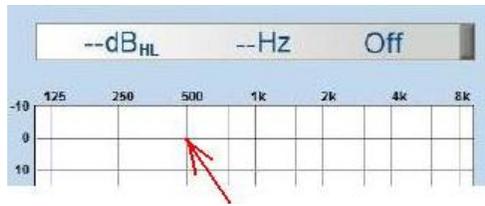
There are other possibilities to work with patient data. You can load the old measurements of known patient with the **Load** button or delete the patient with pressing **Delete**. If you are looking for the special patient in the database, you have to choose the filter according which you want to search (Surname, Birthday, Client-number) fill it and press **Search**.



- For measurement press the icon **AudioF2** on the top of the screen.



- The program's start screen is displayed below with the *Default settings*: right channel is set to air conduction pure tone and the left channel is inactive (i.e. "OFF" is displayed until the channel is turned on). The frequency is automatically set to 1 kHz (any of these settings may be changed by using the mouse or keyboard shortcuts).
- Give the **patient response key** to the patient. Explain him/her that he/she needs to press the patient response key as soon as he/she just hears test tone.
- Put the headphones on. Ensure that the headphones are positioned correctly: red side on the right ear, blue side on the left one. Eliminate any obstructions which will interfere with placement of the earphone cushions on the ear (e.g. hair, eyeglasses have to be put off...)
- All the **settings of frequencies** and **loudness intensities** should be set with the mouse or frequencies with tabs $\leftarrow \rightarrow$ and intensities with tabs $\downarrow \uparrow$. You start with frequency set to 1 kHz and intensity of 0 dB. Continuously higher the intensity at this frequency until the point when the patient hears the tone. Then lower the intensity of sound continuously to the point when the sound cannot be heard by patient (by 10 dB steps).



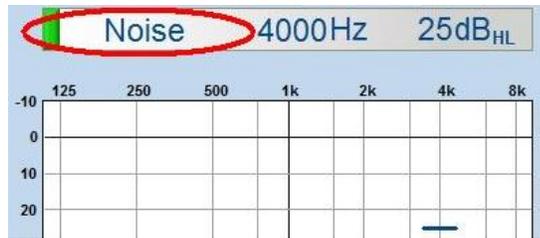
9. Start continuously increase intensity (by 5 dB steps) to the level, at which the tone can be heard again and patient response key was pressed.
10. Confirm the lowest level at which the sound is perceived with the **Enter** button. This point is displayed in the audiogram and write down this value to the tab in Protocol.
11. If patient is not able to hear any intensity at selected frequency, press **No response** with mouse. If patient is not sure, if he/she hears signal, press **Uncertain**.
12. Set the frequency to 500 Hz with the left mouse button, set the intensity to 0 dB and similarly found the hearing threshold. Continue with frequencies according the tab in Protocol (125, 250 Hz, 2, 4, 8 kHz) to construct the audiogram.



13. Press the button **Masking**.



14. The second window will change for masking monitoring with the name **Noise**. Set the masking treasure in the Noise window for no tested ear to 25 dB with the left mouse button.



In case that it is impossible to set the noise parameters, check the parameters in the Settings and switch **Masking** from mode **Automatic** to **Manually**.



Confirm with button **OK**.

15. Repeat all the measurements in the tab with masking and correct the hearing threshold with constant masking intensity of 25 dB. Each measurement confirm with **Enter**, which will change the previous measurement and write down this value to the tab in Protocol.
16. After finishing the measurements for right ear change measurements to the left ear by pressing the L button and repeat all the measurements for the left ear from the point 7.



17. You can save your measurements by pressing the button **Save** or delete them with **Delete**.



18. To finish measurements press **Exit**.
19. From measured values construct the audiograms for left and right ear with and without masking, where at axis x are frequencies of different tones and at axis y their levels of intensity. This graph gives a profile of the person's threshold of hearing.
 - If the patient is not able to hear intensity less than 100 dB press the button **>100 dB** which allows the stimulation higher than 100 dB.