

Brainfinger Access Hardware Considerations



The two key hardware elements are the Amplifier and Headband.

The Amplifier

The black box in the image above is the amplifier. The amplifier is quite unique in that it can sense a .02-microvolt change in signal above noise while sampling the headband signal at 4000 Hz.

The sensitivity of the Amplifier is needed to obtain the desired response to brainwave activity found at the forehead sensors.

The high sampling rate of the Amplifier provides a wide signal frequency bandwidth for correct frequency sensing of brain and body activity found at the forehead sensors.

The amplifier connects to a PC computer via a USB cable. For the amplifier to achieve its desired performance it is required that the power and USB connections into the computer are free of external noise such as AC switching power supplies or other ungrounded sources of noise. The recent development in tablet computers has stimulated improved battery life and easily acquired supplemental batteries. For this reason we strongly recommend that you run the computer unplugged from an external power source. What computer to use with the amplifier should be considered?

The Headband

The headband includes 6 parallel spring sensor holders and a bundle of wires running through them. The sensor holders have a shiny coating, which faces out. This is shown in the image above. The shiny coating on each of the 6 sensors is made from potting the sensor holders and wires with a high-strength slow curing black epoxy.

The image below shows the inside of the headband. In the image note two sensors are unsnapped from two holders to illustrate the ability to replace sensors.



It is best to clean the headband and sensors with a soap and water wipe. Antibacterial soap can be used. Alcohol should not be used as soaking the black epoxy in alcohol can degrade the epoxy coating.

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