At first glance, the number of controls on a soundboard can seem daunting. However, if the board is approached from a logical point of view, it is easy to understand. The most appropriate way to get at a mixer is to think of how the signal flows through the board.

Following the signal path from input to output will allow you to understand the functions and features of nearly any sound board. Signal enters the board, comes down through the channel controls, then is sent over to a mix. Further adjustments can be made to the entire mix, then the mixed signal is passed out of the board.

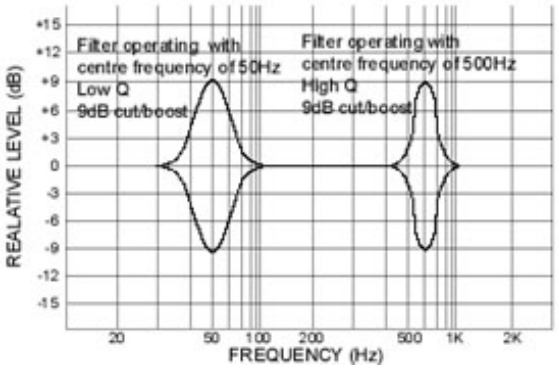
Input: A connection which allows signal to flow into the board. Common types of inputs are XLR (balanced mic level), ¼" (balanced or unbalanced line level), and RCA (Unbalanced line level).

Input Gain: The gain controls each channel's built-in preamp. When working with microphones, the signal must be boosted slightly as it enters the board; the gain adjusts this boost. When using line level signals, you rarely will need use any pre-amplification.

Level Select Button: Like the gain, the level select button(s) adjust how much pre-amplification is added to the signal. Both the Gain control and the Level Select button are used to equalize the levels of all signals in the board. That is to say, all signals flowing through the board should be approximately the same volume so as to make them easier to work with as a whole.

EQ: The Equalizer adjusts the power of the various frequency components of an audio signal. High, Mid, and Low tonal adjustments are common. Boards with a **parametric EQ** allow you to adjust the **centering frequency** of the EQ adjustment.

Centering Frequency: An EQ adjustment creates a spike in a given frequency. Frequencies nearby are also affected, as in the graph below. The centering frequency is the frequency which is most affected by the EQ adjustment.



Low Cut: A low-frequency cut button removes all sound below a certain frequency. This can be useful for getting rid of thumps, hum, and other unwanted sound.

Aux Send: It is here that we encounter the first "routing" feature of a board. The Aux send adjusts, within each channel, how much sound is sent to an Aux output channel.

Aux Shift Button: Many boards have more aux channels than they have aux controls. This button shifts which Aux bus a signal is being sent on. For example, a single aux control could control EITHER Aux 1 or Aux 2.

Pre/Post Button: The pre/post button selects whether a channel's **fader** will affect the level of the signal sent over an aux bus. For example, it might be useful for the backstage monitors to always hear a certain signal, even if it is turned down in the main mix.

Pan: The pan control adjusts how much signal is sent to a stereo **output pair**. Thinking of the pan in terms of the Left and Right channels is easy: but know that it also applies to other output pairs.

Output Pair: Channels are "punched in" to one or more output pairs. The most common is the L/R or Main output. Many boards have other groups, such as 1/2 and 3/4.

Mute Button: Take a guess?

PFL or PRE: Allows you to hear the un-attenuated signal in the headphones or monitor output.

Channel Fader: The channel fader is an overall adjustment of how much signal is sent across the board.

Inserts and Returns: Inserts and returns allow you to send signal from a channel or group of channels out to outboard processing equipment, and then return it. Inserts are in-line: the signal is returned, in its processed form, to the same point from which it left. Returns usually come into their own channel which is then routed to a mix.

Note that many of these controls also exist on the output channels. For example, Aux 1 could be routed into the main L/R mix. Submixes (1/2 or 3/4) can also usually be sent into the main mix. This allows you to create, for example, a master control of all rhythm or vocal or playback channels.