

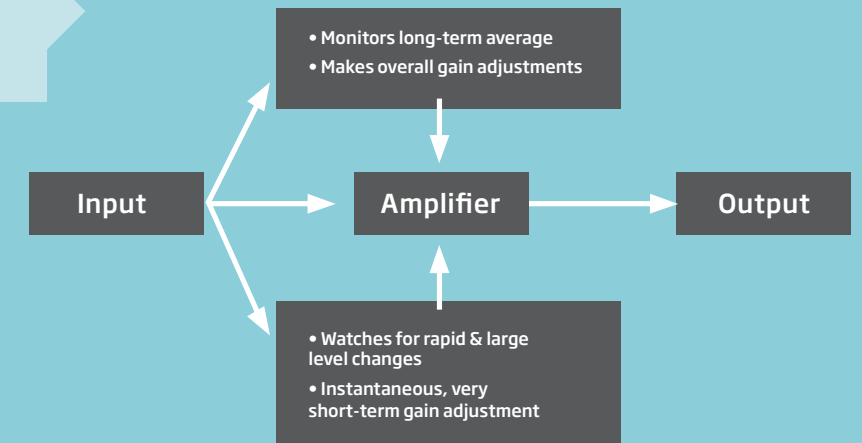
Speech Guard preserves signal fidelity and the important details of speech

The job of amplification is to create audibility while preserving as much of the fine crucial details of speech as possible. Never knowing when an individual phonemic cue will be needed at a particular point in a speech stream to give the conversation meaning, the goal should be to preserve as much information as possible. (**All forms of information.**) It is not enough for hearing devices to make sure that speech is audible. It also matters **HOW** you make the speech signal available to the listener.

Speech Guard is a unique signal processing approach in hearing aids. Until now, all compressions systems used a single analysis system to evaluate the input and adjust the gain applied to the signal. These compression parameters had to apply equally to ALL signals entering the hearing aid: speech, stable background ambient and sudden, extraneous sounds.

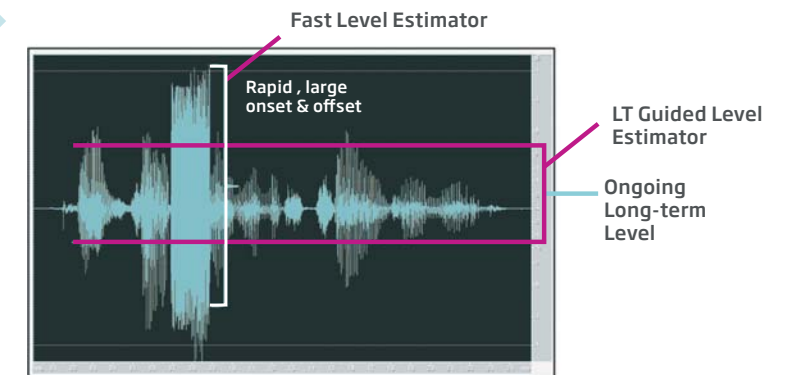
The new technology in Agil is now able to implement two parallel analysis functions. One analysis function monitors the long-term, overall level of the input. It then adjusts the gain of the hearing device to place the full range of the speech signal within the patient's remaining dynamic range. It does this in a linear fashion. If the overall level of the incoming speech signal goes up or down, appropriate volume changes are made. A second, specialized analysis function watches for any sudden, large changes in the signal, as would happen when a door slams, dog barks, dishes clatter etc. If a sudden change in level is detected that is well beyond the moment to moment changes that are expected in the speech signal, an instantaneous, momentary change in gain is made to keep the sudden sound from becoming uncomfortable or distracting. Once that sound has passed, the gain is immediately readjusted to the long-term operating level. This unique approach better preserves the phonemic integrity of speech, resulting in improved intelligibility, sound quality and listening comfort.

Speech Guard Signal Processing



Speech plus Noise Burst

When a sudden signal change is abruptly introduced- such as a door slam- to the long-term average signal, the Fast Level Estimator recognizes the change.



Speech plus Noise Burst with Speech Guard

The Fast Level Estimator precisely compresses the unwanted sound without causing any distortion to the neighboring phonemic environments. This very fast, exact, laser-like action ensures the fidelity of the signal remains intact.

