

Optimized In Situ calibration for DPOAE

— A hybrid of speed and accuracy

You know stimulus calibration is important. You know efficiency is important. We give you both.

Most Otoacoustic Emissions (OAE) systems use a broadband or “chirp” signal to calibrate the stimulus prior to the start of test. After verifying the probe fit, the stimulus is produced from the probe microphone. The chirp is used prior to the start of the actual test to adjust the stimulus levels for the upcoming test sequence. This broadband stimulus is assumed to cover all of the frequencies that will be tested in the forthcoming test.

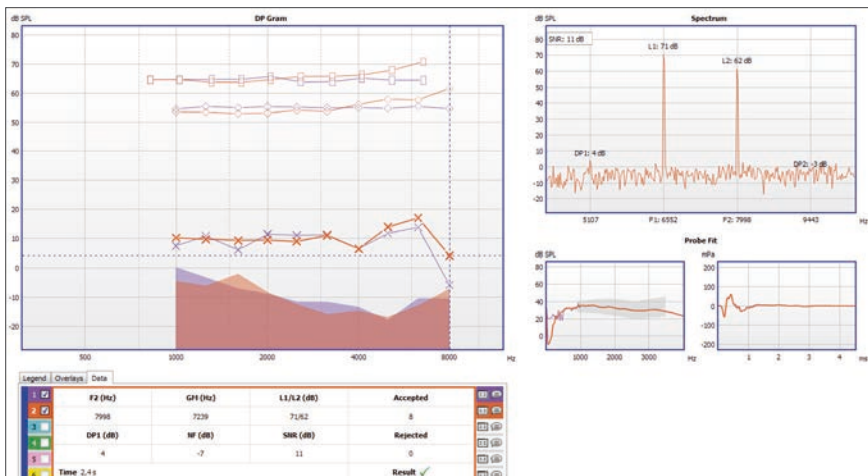
In many cases this is an adequate method of calibration.

Another way to calibrate the stimulus is to use an “In Situ” method using the test primaries that will be used during the test. It is more accurate because it uses the actual test frequencies/levels in the ear and adjusts as needed. However, it is more time consuming because a sweep of primaries is conducted and each pair is checked prior to the start of the actual test.

What “prior to the start” calibration methods don’t consider is probe movement. For testing where accuracy is crucial (ie. historical comparisons, DP amplitude monitoring), movement of the probe from time of calibration to the time of data collection could affect the results.

To reduce inaccuracies due to probe movement, some In Situ methods run a single tone during the test just prior to the test frequency. This is much more efficient since it does the calibration and immediately runs the test frequency. However, only a single tone or chirp is used. It does not use the actual test primaries.

Optimized In Situ combines the above methods. Following a check of the probe fit, the two primaries are used to calibrate each test frequency and the data for that tone pair is immediately collected. The test proceeds with subsequent tone pair calibration/measurements until all selected frequencies have been tested. As a final confirmation of accuracy, the probe check is repeated at the end of the measurement to ensure measurement conditions were consistent throughout.



Notice the signal level is not only impacted but the response amplitude and SNR are also affected as a result of the calibration method selected.

Healthcare solutions with one thing in mind. You.

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