Technical note

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How to perform a fair listening test

During the years we have been participating in many listening tests, both objective and serious blind tests and subjective bullshit tests. In such, many use their eyes instead of their ears. If the test person knows the brand he shall judge by listening, it's very usual that he wants to confirm his earlier statements or just reflect what a major brand's market department has told him.

An example of a bullshit test

A while ago we were participating in a test of several brands of loudspeakers and power amplifiers. The rental company who conducted the tests had just got a sound pressure meter. Their method was to turn up the level to the amplifiers until it was visible clip on the clip indicators, and then measure the SPL out of the speakers. The loudest playing amplifier won the test they state! It sounded terrible, as they didn't measure the sound quality, instead we had to listen to how bad the amplifiers sounded when they indicated clip. Of course the amplifier with a clip-indicator with the slowest characteristics won, even if other amplifiers had twice as much power.

Blind-tests

A fair listening test should always be a blind-test, so the visual design or the brand name doesn't influence the test results in a subjective way. So called ABX tests are preferable as they switch between the two test objects with a special pattern ABB or ABA. A person that cannot say if X is A or B is not qualified to say if A is better/worse than B.

There are also three important parameters that have to be checked carefully so they don't influence the test results:

Checklist

Gain of the power amplifier can differ from 20 to 40 dB. All channels must be adjusted exactly to the same gain with a high-resolution AC voltmeter, preferably a dB-meter with a resolution better than 0.1 dB. If this adjustment isn't made, the one with the highest gain always wins.

Phase has to be checked as many US manufacturers still use pin 3 as hot in the XLR-connector. The AES standard define pin 2 as hot. If one of the test amplifiers reverse the phase and is used in an active system, the frequency response in the crossover region will be destroyed.

Cliplimiters always reduce the peak power. The purpose is to prevent serious clipping in the power amplifier, but even at low listening level there can be transients which triggers the cliplimiter and the clip indicator is too slow to indicate it. The advice is to be sure of if the reference amplifier has cliplimiter or not, and set the rest of tested amplifier in the same settings. All Lab.Gruppen power amplifiers has switchable cliplimiter on the rear panel. To run one amplifier with and the other without, only compare the sound of the cliplimiter itself, not the sound of the amplifier.

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