NORDOST

MAKING THE CONNECTION

System set-up & tuning disc

It is a sad fact of audio life that even the best equipment, even (dare we say it) the very best cables, cannot overcome poor system set-up. Inadequate supports, lousy AC supply quality, not enough attention to detail – all these things undermine system performance. But by far the biggest problem (and the most commonly encountered) is badly positioned speakers. The problem is, that nobody tells you how to get it right, and even if your speaker positioning was right once, changes to the electronics, furniture, décor or simply shifting the speakers and then replacing them, all mean that there's a good chance it's not right any more.

Half the battle is knowing where to start. If you are starting from scratch, with a new speaker or a new room, go to www.nordost. com where you'll find a downloadable pdf document that outlines various approaches to establishing an initial position. Once you've done that, or if you are working with an existing set-up, this disc is designed to give you a set of tools to assess and if necessary, fine-tune your speaker placement. These vary from the simple (channel checks, pink and white noise) to the more complex and unusual (the LEDR tracks and uncompressed drum sounds) but all are essential diagnostic devices when you are faced with an under-performing system. It will also help with identifying low-frequency modes in your room, which are crucial when it comes to positioning full-range speakers or integrating sub-woofers.

Finally, there are a number of useful "system service" functions, including a de-gauss track and burn-in signal, both of which are essential precursors to fine-tuning any existing set-up or new component.

We find this disc invaluable when setting up for shows or just working with our own, home systems. We think you will too.

1 Channel Check   00.39
Simple left and right channel announcements to check correct system connection.

2 Phase Check   00.34
In-phase and out-of-phase announcements to check connection polarity; the in-phase announcements should be solidly centered between the speakers, the out-of-phase should be diffuse and spread out.

3	Pink Noise – Stereo	01.05
4	Pink Noise – Left	01.05
5	Pink Noise – Right	01.05
6	Pink Noise – Alternating	02.04
7	White Noise – Stereo	01.05
8	White Noise – Left	01.05
9	White Noise – Right	01.05
10	White Noise – Alternating	02.04

Pink Noise and White Noise are useful for checking and comparing the frequency response and in-room balance of speakers. Pink Noise should appear even in level from top to bottom, while White Noise is brighter, with more high-frequency energy. The tracks are arranged to allow assessment of speakers together in-room, individually, or in comparison – the latter particularly useful for comparing speaker balance and placement.

LEDR Tests
11 Tone 1. Up
12 Tone 2. Over
13 Tone 3. Lateral

The Listening Environment Diagnostic Recordings are a series of computer-generated tones, remarkable tools created by EASI to assess speaker positioning and room interaction. Their predictable motion and symmetrical paths allow you to hear how adjustments to speaker placement and listening room acoustics affect the reproduction of the stereo soundfield. Their objective, repeatable nature makes them a uniquely powerful device when it comes to optimizing speaker placement and acoustic treatment.

Tone 1. Up
You should hear the computer generated "chuffing" sound start behind and at the base of the left hand speaker. The noise should slowly climb, vertically, around six feet. It will then repeat behind the right hand speaker. Any irregularity or tendency to bend or deviate from a vertical path suggests either problems with a tweeter or strong reflections. Likewise, the paths should be symmetrical and the movement evenly spaced. A lack of height in particular suggests that there are strong reflections from the ceiling, an often-overlooked source of problems.

Tone 2. Over

This is, in many ways the most telling and useful of the three LEDR tests. The sound should start low, outside the left hand speaker, moving up and over in an even arch to finish at the same point outside the right hand speaker. The sound then repeats in reverse. The motion should be smooth and the arc even and symmetrical. Any tendency to hang up outside the speakers suggests that either speaker placement is too wide, or toe-in inadequate; Likewise, a tendency to jump across the middle of the arc. Once you have adjusted the speakers a few times you'll quickly recognize the effect of spacing as opposed to toe-in, but in essence, a stop/go halt in movement suggests a spacing problem whereas a reluctance to move followed by a sudden rush across the centre suggests that it's toe-in that's at fault. Cramping of the arc at either end suggests an overly close proximity to the wall, while unevenness in the arc itself implies asymmetry in the ceiling reflections. The height of the arc should at least match the height of the Up tones.

Tone 3. Lateral

This is the only LEDR test that involves four sets of tones as opposed to two. The first set start in the left speaker and move across to the right one. The second set starts from outside the right hand speaker and moves across to outside the left hand one. Then it's right to left and finally outside the left to outside the right.

This series is particularly useful for fine-tuning speaker spacing and toe-in once you've established a decent, symmetrical path for Tone 2, although it's important to keep track of the various tones, those that start and finish at the speakers and those that start and finish outside them.

You can find more information regarding initial positioning of loudspeakers at the Nordost Web-site, www.nordost.com. Just download the Speaker Placement pdf.

14 System Degauss   03.34

A complex synthetic tone that helps to remove the parasitic magnetic fields which build up within audio circuits. This track should be used both during initial set-up and regularly thereafter.

15	Bass Drum	01.00
16	Snare Drum	01.00
17	Hi-Hats	01.00
18	Drum Pattern 1	01.00
19	Drum Pattern 2	01.00
20	Drum Pattern 3	01.00
21	Drum Pattern 4	01.00
22	Drum Pattern 5	01.00

These tracks contain un-compressed recordings of the main parts of a drum kit, individually and together. They serve as a useful indicator of the dynamic response of a system at different frequencies, as well as helping to reveal how well it handles repeated low-frequency pulses – a key consideration when it comes to the pace and timing of music.

Warning: Uncompressed recordings can damage equipment if played too loud. Always start these tracks with the volume low and advance it slowly to the desired level.

Test Tones

23 Reference Level at -10dB   00.30

Use this to set level for the series of sweeps and test tones.

24 Frequency Sweep 20Hz – 7kHz   02.08

A standard frequency sweep. It will let you hear how evenly the system drives the room, as well as identifying potential problems, rattles and the like within speakers.

25 Low Frequency Sweep (Timed)   01.50

This slow, low frequency sweep is specially timed to allow you to identify the principle resonant frequencies within a room. It starts with a short silence, so that the signal frequency is synchronized with the player's clock, the 20Hz tone starting at 20 seconds. Thereafter it advances at 1Hz per second, meaning that when you hit a resonant frequency, the time clock will tell you what that frequency is – 00.45 means 45Hz, 00.57 means 57Hz and 01.11 means 71Hz (that's 60+11). The sweep runs from 20Hz to 130Hz.

26	Low Frequency Tones 18Hz
27	21Hz
28	24 Hz
29	27Hz
30	30Hz
31	33Hz
32	36Hz
33	39Hz
34	42Hz
35	45Hz
36	48Hz
37	51Hz
38	54Hz
39	57Hz
40	60Hz
41	65Hz
42	70 Hz
43	75Hz
44	80Hz
45	85Hz
46	90Hz

Discrete low-frequency tones, each lasting 20 seconds. These are ideal for assessing the placement of speakers and sub-woofers, as well as the integration of the latter.

47 System Burn-In   20.00

Another complex, synthetic track, this time designed to burn-in speakers and equipment from new, more quickly than music does. Simply set this track on repeat and leave the room. If you want to minimize the leakage of noise (and it is practical to do so) set the speakers facing each other and connect them out of phase.