SUPPLEMENTAL INFORMATION

SPL meters and Apps for your system setup

In Issues 3 and 4 of this Newsletter series we asked you to try manual speaker setup for your surround sound system. Our experience has shown that with a correctly balanced system most people enjoy deeper viewing pleasure and involvement because they more readily get "lost in the experience". However, it can take awhile for your ears to acclimate to a different system balance (particularly one that's not exaggerated), so after setup, use the system for at least a week or more with the new settings before you make any final judgements on your preferences.

If you do find more satisfaction and enjoyment with a "properly balanced" system but you'd still like to impress the occasional neighbor or relative, you can carefully select source material that includes lots of bass and surround information so their need for those guilty pleasures will be sated.

Tools available for your set up fun (or, "How I learned to stop worrying and enjoy the Test Tone"...)

SPL Meters: An SPL meter measures Sound Pressure Levels; how loud the sounds it's exposed to are. Using an SPL meter lets you properly set the volume for each speaker in your system. Experts will tell you the goal is to have all the speakers set to the same volume level at the prime listening seat(s). This supplement provides a list of tools that can be used along with the instructions in Issues 3 and 4 of this series.

Note that even if your system has automated setup capability, it would be a good thing to check the automatic settings it has made to ensure the best performance in your room. And be sure to check everything the auto setup has selected including speaker "size", speaker distance, subwoofer yes/no, channel levels, etc.

We've done some research on helpful tools available for you to make this process possible and perhaps easier. Some of these are audio only, but several include test patterns for video calibration as well. We've looked for free or inexpensive ones as chances are you're not going to be using them on a daily basis.

We've tried to include simple to use tools but your mileage may vary based upon your experience and technical understanding. At the very least, if you get nothing else, we would strongly urge you to get an SPL meter or SPL meter app for your smartphone, computer or tablet. Before you purchase or download any SPL tester be sure it can read over 80dB and has "C weighting" and "Slow or Average response" settings.
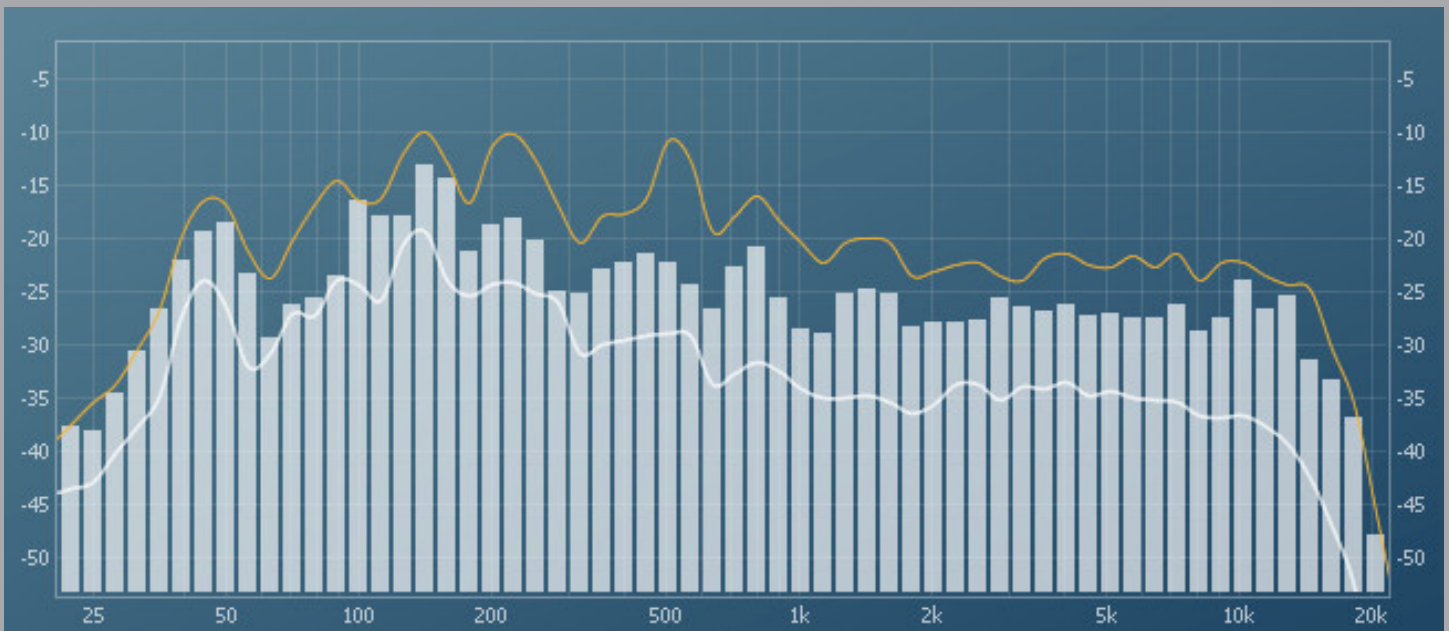
RTA - Real Time Analyzers: Some of the apps listed include RTA software. A Real Time Analyzer is a device that measures individual frequency bands (e.g., 20 Hz, 40 Hz, 80 Hz, etc.) and tells you how loud each frequency band is. RTAs can be very useful if you've got an elaborate equalizer with the ability to adjust the frequency response of your system in narrow bands. If your electronics don't include high quality equalization, the RTA can at least give you a graphic representation of your system's in room frequency response.

You can make some changes to the system's in room response with tone controls (Be very careful. Cranking up the bass and/or treble to "fix" system/room anomalies can quickly result in blown woofers or tweeters.) Slight changes in speaker positioning can also change the system's response. And keep in mind you're not only measuring the direct output from the speaker, you're measuring the reflections of that output from all the walls, floor and ceiling too.

Please note that the microphone in portable devices tends to be of limited quality so you'll be measuring at a low accuracy level. In particular, inexpensive SPL meters tend to be less sensitive to low frequencies (bass) and you may have to compensate by setting the subwoofer level several dB higher than the other speakers in the system. Be sure to evaluate the results with different movie or music examples before deciding on the exact level. As long as you set every speaker to the same level using the same device (and consider the subwoofer caveat above), you should end up within acceptable limits for good surround sound performance.

As with any changes you make to system settings, we strongly suggest you write down all the settings as they are before you make changes so you can go back to them if you wish.

If there isn't a specific link for an item listed below, please "Google" the device to find out where you can get it. We've also linked a document with other tools and applications for your fun and enjoyment.

If you're going to try any of these test devices or programs be sure to turn the system volume all the way down before activating any tests.

The List

- **The THX Optimizer**

  A fairly comprehensive system setup package. THX has also introduced an app to help with the setup process.
  THX Optimizer™: ***THX Optimizer***

- **Physical SPL Meters** (as opposed to software apps for your handheld device or computer): Handheld SPL meters from companies such as Galaxie Audio, Nady, and American Recorder Technology can be found at local music stores such as Guitar Center and Sam Ash, starting at about $60.

As an FYI, if you want to use any SPL meter to check system levels, set the meter to "C" weighting and "Slow" or "Average" response. Issue 4 of this Newsletter series gives you step by step instructions for system set up with an SPL meter/app.

Galaxy Audio CM-130

- **Real Time Analyzers (RTA)**

  Measures the frequency response of the speakers/system in your room and gives you a graphical representation of same. Because the room and its sound reflections are a part of the measurements you can't look at the result you get as indicative of the pure response from your speaker(s). We'll discuss how you can benefit from using an RTA in a future issue.

  - JL Tools iPhone/iPod Touch free app: ***JL Tools Free App***

  - Other audio tools by Andrew Smith (who created the JL app above) available at the iTunes store (for a fee): ***Andrew Smith Audio Tools at the App Store***

- **Other iOS Tools**

  - dB Meter Pro - iOS - $0.99
  - Real Time Analyzer - iOS - $10.99
  - Soundmeter - iOS - $19.99
  - UE SPL - iOS 4.0 & up - Free
  - Decibel Ultra Pro - iOS 4.1 & up - $3.99
  - Decibel 10 - iOS 3.1 & up - Free
  - SPL Meter - iOS - $8.99
  - Decibel Meter Pro - iOS - $0.99
  - Audiotools - iOS - $19.99
  - Pocket RTA - iOS - $29.99
  - There are more out there, if none of these makes you happy

SPL Meter App Example

- **Android Tools**

  - Free Android App: *SPL Meter*
  - Android app full audio tool box: *Full Audio Toolbox*
  - Sound Meter Pro - Android 1.6 up - $0.99
  - deciBel - Android 1.6 & up - Free
  - Jinasys - Android 1.6 & up - Free
  - Audalyzer - Android 1.6 up
  - Free Speedy Spectrum Analyzer - Android 1.6 up - $4.99
  - RTA Pro Analyzer - Android 1.6 up - $5.49

- **Blackberry App:** *SPL Meter for Blackberry*

We haven't tried all these apps and there are others available. Look at the reviews for some insight into operating ease and accuracy. Note that just having the SPL meter capability is all most people really need. Getting into Real Time Analyzers and frequency response measurements can be complex and confusing.

The following includes some reviews of apps:

- *Best Home Theater: Calibration Tools Reviews*
  (Check pricing around the web.)

Another popular setup disc:

- *HD Benchmark Calibration Disc* (Click on the HD Benchmark tab along the top of the Home Page. This is primarily a video setup disc - Highly regarded among industry experts.)