

Stereo Clarity Shorts: A Reference Disc

Tuning

1. Channel Identification: Pretty self explanatory. This should be the first track you play when tuning. It lets you know if you've wired your speakers to the correct channels. Sometimes you mix up an RCA or set of wires so it's crucial to get this right for proper staging.
2. Counting from 1 to 25: This track is of the male human voice and should help you distinguish your center image and tonality. The sound should be that of a man counting in what sounds like an acoustically dead chamber. There should be almost no echo or reflections.
3. Relative Polarity: This will help you really nail your center image. In phase should sound like his voice is coming from a clear and definite point. Out of phase should sound like it's coming from what would seem like everywhere. If the image isn't defined you need to try switching the phase on your midbass and possibly your tweeters. I'd suggest swapping the left midbass polarity first. If your image is clear and defined but not centered you need to work on time alignment.
4. Digital Silence: This track is 100% silent. If you have a noise floor or alternator whine this is the track to play to seek the noise out.
5. Sweep 20-200hz: This is to test out the frequency response of your subwoofer and the transition into your midbass drivers. The tone should sound like it's the same volume throughout its duration. It's likely that it will be softer down in the 20hz area simply because it's difficult to play those frequencies. If you hear a sharp rise or dip in response after passing where your crossover for your midbass/sub is then you might need to either increase or decrease the level on your sub or midbass gains.
6. Sweep 200-2000hz: Use your equalizer to ferret out the dips and peaks that you hear in response. It should mostly be your midbass drivers playing these frequencies unless you have a 3way front stage or extremely low playing tweeters.
7. Sweep 2k-20kHz: This should reveal your crossover point between your midbass and tweeters. Use your EQ to tame the peaks and dips heard if you find any.
8. 100hz Test Tone: If you choose to set your gains via DMM (digital multi meter) or an oscilloscope then you will use tracks 8-10 to do so. With your gain set to minimum, set the track to repeat and place your volume knob/number at roughly 3/4 volume or slightly under its maximum volume. Then use your DMM or O-scope to test for the needed voltage that will yield the RMS power of your amp. Keep turning up the gain till you hit the proper voltage. The 100hz track is for your subwoofer channel.

You can figure out the voltage you're looking for by doing some quick math. Take your amplifiers RMS wattage at the impedance (ohms) your speaker is and multiply it by the impedance. Now, take the square root of that number. So if your amp makes 500rms at 4ohms the math would be... $500 \times 4 = 2000$ then take the square root of 2000 and get 44.7 volts!

9. 1000hz Test Tone: Apply the steps above to use this tone when setting the gain on your midbass drivers.
10. 4kHz Test Tone: Same as above but for tweeters only.

Staging

11. Ralph's Rhapsody: This is a very special track by Ray Lynch from his album Best of Ray Lynch. Separation is phenomenal and staging is out of this world. I'm picking out about 5 major sounds. The first is what sounds like a wooden xylophone which should be dead center. There is a sound of a man making a variety of noises as well. He first should sound slightly left and higher than the xylophone. He is shifted to the left and then to the right side of the stage. There are "doot doots" coming from two places. The high is coming from the very right side of the stage with the lower octave alternating side to side. The "ahhh" sounding like a chorus of angels should always come from the left most side of the stage. The udu sound should be concise with a quick decay.
12. Walking Sax: This track should give you a good idea of your overall stage. You should be able to hear the faint clack of his keys being pressed. The sax player starts on the left and slowly walks to the right side of the stage and then eventually makes his way to the middle. If you're sharp you can hear something interesting about the turn he does as he hits the right most part of the stage and turns to head toward the middle. He actually turns AWAY from the microphone. You can tell this because there is a slight alteration in the high frequencies where his body is in the way of the sound exiting the instrument.
13. The Race: This is a song by Yello, a German band mostly known for Oh Yeah (think Ferris Beuler's day off). The race car should start off fairly quiet and rip by fairly loud and proud. There's a lot going on in the sound when the instruments come in but you should be able to pick out the individual trumpets that are placed on either side of the stage. The drums should sound fairly close and detailed. Listen for the car as it travels back to its original position. The man who is singing very low should come in at 36 seconds and his voice should be accompanied by a feeling of other lower frequencies. The bari saxophone should be very prominent and in your face when it comes in.
14. One: A remastered track from Metalica and very well recorded. There are men's voices during battle that start the track. Listen for the helicopter as it flies over head from left to right. The guitar should be very prominent. The kick drum should be extremely powerful and borderline overpowering in a good way.

15. Little Bird: We have the lovely Imogen Heap to thank for this track. The opening sounds are that of what appears to be an outside courtyard with birds. The stage should seem very large and open. Her voice should almost cut the stage back into perspective like she was standing right in front of you the whole time and you didn't even know it. There is a low sweep in this song too, see if you can figure out where it is.
16. Low Rider: War recorded this track in 1974 and it debuted on their "*Why can't we be friends?*" album in 1975. The cow bell should pretty much blow out your left stage. That's about as far left as I've ever heard anything stage. The drums should come right into the center along with the bass guitar.
17. Peace in a Valley: This track is quite old but wonderful never the less. We've got Elvis with signature vocals on the left and a trio of unknown gentlemen on the right. Elvis has quite an interesting voice that digs into the lower registers a good bit. I think you'll find it's a very pleasing track.
18. Money for Nothing: Dire Straits in their finest hour. This might be a familiar track to most of you car audio guys from various other reference discs. The opening drums are all over the stage and just when the sound is getting way out of control it cuts to the electric guitar. The kick drum should be pretty solid in this track much like the Metalica track. Not quite as strong though.
19. Les Raisins de la Grand-Mere: From the first time I heard it I knew this was an interesting piece. The band is a group of cello players. First you can hear the one on the right side of the stage. As the track progresses you can hear a second cello chime in. Then, the third member (using his bow) presents himself and really brings the track to life. You get a unique sense of space with this track that's rare in recorded music.
20. The Boxer: My favorite track on the disc which is why I was unable to trim it down. I felt this one was special enough that I HAD to give you the entire thing. It's recorded at a fairly low volume so don't be afraid to turn it up. The King's Singers is a group of extremely talented vocalists that bring to life an old classic originally written and performed by Paul Simon. The staging in this song is the best I've ever heard. I shouldn't have to explain much here. Sit back and enjoy the show.

Vocals

21. Aint No Sunshine (when he's gone): I really wish I could tell you who recorded this track so I could seek out more of her work. Her voice is pure, uncompromised and extremely well centered. In fact, the pureness of this track is what I like so much about it. Nothing but her voice and a standup bass. The silence in this track is almost deafening. Since there is no amplified instruments like electric guitar there isn't any amp his so the silence can actually be heard.

22. Half Life: Another gem from Imogen Heap. The beginning of this track is flooded with background noise from people bustling about. My gut feel is that it's that it was added into the track but I think I might be wrong. It's present throughout the track and why would you add something like that in? Regardless, her voice is light and airy and remarkably centered.
23. It's Alright: This is an acapella track from Huey Lewis & The News. You can hear them discussing how they're going to get things going right before they get into it. The separation in this track is pretty remarkable and it's just great for tonality. I almost feel like the man singing the bass line has his own mic because his sound is very defined.
24. Roui: A recording by Souad Massy whom is an artist I know nothing about except that her voice is nothing short of enchanting. The guitar is at a much lower volume than her voice, so don't be surprised when she comes in. It's in a language I don't speak and I think that actually helps you focus on the SOUND rather than the WORDS in the song. I'm privileged for having heard this track.
25. My Immortal: Amy Lee has a voice that I think is not given nearly the credit it deserves. Taking a break from her usual harder rock, Amy recorded this song which was actually written by lead guitarist Ben Moody. The feeling of the crescendo is quite powerful. Piano has a good time letting you know if your tweeters are crossed over too low as well so be on the lookout for that.
26. Can't Get You Out of My Mind: Sonya Kitchell who? Trust me, you'll know after hearing this track. Her voice is close mic'd and as pure as can be. Good dynamics and even has a decent bass line to boot. The style is old but the singer is new. I was able to pickup this album online, new, for less than \$7. It's fantastic and I'd suggest you do the same
27. Blue Moon: Elvis is alive and well apparently. He graces this disc for the second time with a track called Blue Moon. Although he's not the original performer/writer it's hard to imagine anyone doing it better than him. The detail in his voice is fantastic and you certainly get an excellent sense of space from the room.
28. Over the Rainbow: Israel Kamakawiwo'ole is a native Hawaiian singer with a golden voice. He's no longer with us but he's left us with this wonderful track. It's a fresh spin on a familiar melody and I think you'll agree it's certainly deserving of its place in the vocals section.
29. Look No Further.: No vocals section would be complete without a Dido track. Unaltered and pure, her voice seems to pierce the very fabric of the track. As a dear friend of mine commented, "Sounds real to the point she might come sit in your lap." We can only hope Bob, we can only hope.

30. Your House: Alanis Morissette might seem like an unlikely candidate for a reference disc but I assure you her place is well deserved. This was a hidden track appended at the end of breakthrough album Jagged Little Pill. It's a bit dynamic so hold on!

Fidelity

31. Midnight at the Oasis: Originally recorded by Maria Muldaur back in 74, this track has been redone by Renee Olstead and it's fantastic. Punchy lows with seemingly magical high frequency chimes. The mood her voice sets almost puts you in the room at a table drinking your (insert favorite over 21 drink here) and enjoying the atmosphere.
32. Moondance: Michael Buble has a habit of redoing older songs. His rendition of this (and most other) song is fantastic with a wonderful feel from the big band era. His voice is one of the best I've heard from a current male vocalist. His voice reminds me of Frank Sinatra. That might be the reason why he owns two tracks on this disc and the second one is a Frank Sinatra remake.
33. Broussard's Lament: This track complements of a rising star named Sara Jarosz. I highly recommend you pick up her album *Song Up In Her Head*. The rest of her album is equally nice. Fantastic recording quality and a wonderful blue grass vibe from all the music. There doesn't appear to be any type of effect on her voice either. The string bass in the track has a bellowing presence too. A poorly integrated subwoofer will be easily distinguished on this track.
34. Mr. Bones: Or at least that's what I'm calling it. No information was available on this track but it's one of my favorites. The string hits on the acoustic guitar produce a sweet high frequency sound of pure detail that I really like. You can really hear the room in this song and I feel like it really puts you there with the artist.
35. Sierra Highways: Pat Coil recorded this live at Sheffield labs and the resulting recording is fantastic. I always pull out this recording when I'm looking to test dynamics and a set of tweeters. This is the longest track that I cut on the entire disc and I did it so you could hear the gradual crescendo as the song progresses. Slowly things start to get more dynamic. It's recorded at a lower level too so you should pull that volume up a bit. This was the first sound I ever heard through a McIntosh tube amp.
36. Kind of Woman You've Never Had: I'll be honest, I don't even know if it's called that. I couldn't find any information regarding this track but It's a good one. Staging is quite good with great separation. Her "S's" are articulate without that hot S sound that plagues so many recordings.
37. Some Jazz: With no words or track information I can't identify this one. If someone knows it's source please let me know so I can give credit to the original artist. It's recorded a bit loud so back down the volume knob a bit (it turns to the left too you know!). The detail in the snare and reed from the saxophone really give you that "jazz club" feel.

38. Dirty Low Down and Bad: Keb Mo brings some old school style to this disc. The track actually has a fairly good bottom end that's very full. His voice seems to be preceded by the guitar though. The high frequency content of the strings is actually quite pleasant. There is actually a piano in the song that's hard to make out.
39. You Look Good to Me: This track is an absolute delight and one of my favorites. Many thanks goes out to the Oscar Peterson Trio for this lovely work of art. The triangle will test the upper limits of your tweeters and reveal things like tonality and decay. The stand up bass will put your lower octave to work as well. This track is full of intricacies that really complete the experience. First off, listen to the switch starting at 45 seconds in. The bass player was originally using the bow and then puts it down and uses his fingers to pluck the strings. You can actually hear him put the bow down and place his hand on the instrument again! You can also hear him silently scat to the music as he plays too.
40. In The Presence of Enemies: Dream Theater was not a name I knew prior to hearing this track. Now I'd like to hear more. A well recorded rock song that actually rocks? No way! Believe it, it's hard and fast and won't make your ears bleed from gratuitous amounts of clipping.

Unique

41. Celestial Soda Pop: Ray Lynch has secured his second track on this reference disc with the song that sent his career Platinum with multiple Billboard Music awards. The midrange detail and clarity on this track is out of this world. It's a quiet track so don't be afraid to turn it up. It's not very demanding in the bass department but your mids will have a field day with it. Certainly deserving to be in the Unique category of this disc.
42. Don't Let Your Right Hand Know: Another track I can't identify the performing artist. Room interaction is high on this one and his obvious style brings you closer to the blues than ever before. I've extended the cut of this track to make sure I included his "snaps". I've found that the snaps sound vastly different in the car vs. the home audio setup. This will take some serious tweaking to get it right.
43. Avratz: A band with a name like Infected Mushroom is destined for the Unique section of this disc from the beginning. Every part of this track is great. The silence in between the beginning parts is absolute. The spring sound that enters the right side of the stage could possibly be the most real sound I've ever heard come through a transducer. It really increases the depth of the track. When the bass comes in you'll know. The rest of the track is very eclectic and I think you'll like it. And don't worry, there's plenty more where that came from. The song is over ten minutes long!

44. The Oh of Pleasure: The award for highest number of tracks on the reference disc goes to Ray Lynch. This is another one of his master pieces from the Best of Ray Lynch album that I again, suggest you pick up. Close your eyes and listen to this one. I imagine that I'm in a canoe slowly floating towards a tunnel that has a speaker on the left and right side of the entrance. As you approach you can hear it going around you. It's very cool and I'm not sure how it was done but with a well staging system it will knock your socks off.
45. Stairway to Heaven (acoustic): Originally written and performed by Led Zeppelin but the performing artist is unknown. Never has it sounded as sweet as this. From critical listening it sounds like a duet with two acoustic guitars in the same room. The sound of fingers on the strings should be quite evident, enjoy.

Bass

46. Bass Mechanix: I know that's the artist but I don't know the song. The song has a wonderful slow dipping sweep that snaps back. I believe it's in the lower 20's at its lowest point. The whole track is a trip but things really get good at the 58 second mark. If you have a subsonic I applaud you for protecting your speakers but shame on you for buying incapable speakers! You'll miss out on this track.
47. DMT: I've never tried it and don't plan to. But it certainly makes for a trippy techno song with crazy bass presence. This is from the 1200Mics album and the rest of their stuff is just as, well...unusual. Listen for the opening infusion of bass, it's like stepping into another (trippy) dimension.
48. Deep Bass Song: When I got the file that's what it was named and that's what I'm calling it. It's all bass all the time. My small home audio subwoofer (with a tuning of 35hz) is unloading pretty bad on it. I'd only play this one if you think your system is ready for it. Keep the volume lower and gradually move up.
49. Oxycotin: Lil Wyte throws down some deep bass on this song. No idea on any of his other songs and I don't know what he's doing now actually (rehab perhaps?) but this song has bass there's no denying that.
50. Late Night Tip: THE bass song of car audio. I couldn't leave it out. I'm sure most of you are familiar with it which is another reason it appeared on the disc.