TARA Labs RSC Air 1 Interconnects:
Simply Well-Executed

- **Description:** RCA-terminated, analog interconnect cables.
- **Dimensions:** One-meter pair.
- **Price:** US$ 795.00 for one-meter pair. US$ 645.00 for half-meter pair.
- **Manufacturer:** TARA Labs. Telephone: (541) 488-6465. Web: **http://www.taralabs.com**

With so many things, well-executed simplicity often proves fruitful. However, with audio cables, ideas that seem simple in concept aren't necessarily easy, or inexpensive, to execute. Take TARA Labs' RSC Air Series interconnect, for example. While there are other companies also using Teflon "air tubes" in their construction, TARA developed a design that was (and still is) quite unique in the audio world. Rather than carry the conductors in Teflon air tubes bundled with other empty Teflon air tubes for spacing, TARA developed a single, large-diameter Teflon air tube, inside of which are **smaller, *built-in* conductor-carrying channels (click to see illustration)**. This means that the conductors are carried along the inside wall (in a twisted pattern) down the length of the large tube, with a good deal of air separating them, and *without* the need for any additional empty air tubes for spacing. Less Teflon (a very good dielectric), more air (an even better dielectric) than other cables of similar volume. Simple in concept? Yes. Remember, though, that this isn't off-the-shelf stuff. Rectangular solid core conductors of 8N copper are not as commonly available as round ones. And the larger-diameter Teflon air tube with the built-in channels is also probably on the costlier side of audio cable parts, as, to the best of my knowledge, it's a custom thing unique to TARA Labs.

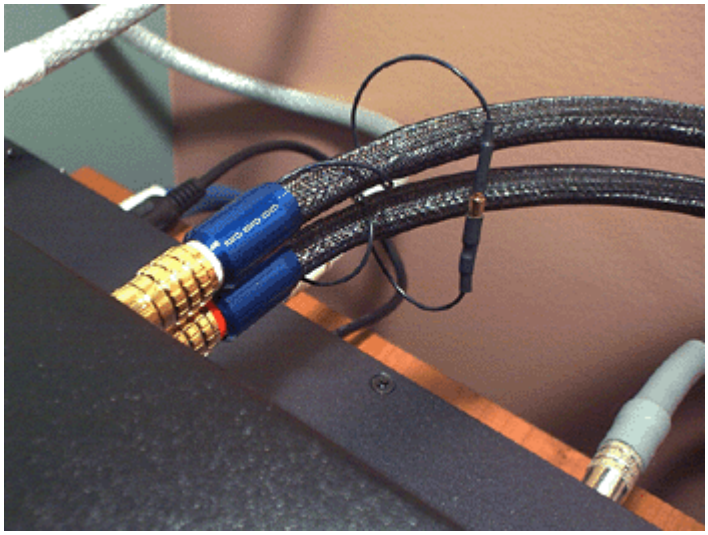
NOTE: For more about construction details and information about TARA's RSC (rectangular solid core) conductor, see Garry Lambert's comments in the Q&A below.

Before I get to how the RSC Air 1 performed in my rigs, I wanted to offer a few quick comments about its build quality, notable physical qualities and appearance. The TARA Labs RSC Air 1 is, in my opinion, the best looking audio cable I've *ever* seen, with an appearance that connotes understated elegance and very fine fit-and-finish. The RSC Air 1 is sheathed in sheer, black, braided sleeving through which can be seen the braided copper shielding--the net effect is not unlike black chrome. This black, braided sleeving

is quite durable, having survived many cable change-outs, which includes some scraping against wood as they were threaded through the narrow opening at the back of my desk hutch.

The single-ended version (the version I reviewed) of the RSC Air 1 comes terminated with very attractive custom, locking, Teflon-insulated TARA Labs RCA plugs. If you buy this cable, be sure not to over-tighten these aptly-named “Torque-Lock” plugs, as they will clamp down *hard* if you do--I can imagine cheap RCA jacks being deformed and/or twisted silly by ham-fisted tightening of these barrels. WBT’s TopLine RCA’s are the only other plugs I’ve used that can clamp down as hard as these. Removing the locking collar from the plug reveals very clean termination handwork that is potted with a clear material, I'm guessing for reasons of minimizing oxidation and simply protecting the solder joints. Just aft of each of the RCA plugs is a thick, blue anodized, solid aluminum strain relief.

Physically, the most obvious *unique* feature of the RSC Air 1 is the little pigtail-like wire jutting out of the strain relief on the source end of each of the interconnects (see photo below). This is a part of what TARA Labs calls their Parallel Shielding System, and was inspired by the "star grounding" concept. You can find a more detailed explanation of the concept behind the Parallel Shielding System, as described by Garry Lambert of TARA Labs, in the Q&A at the end of this article.



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Listening to the Air

A lot of cables are sold as being designed with neutrality in mind. Based on the whitepapers I've read on TARA Labs' site, it seems clear that TARA's goals with all of their cables is to remain as neutral as possible, with an intended increase in neutrality as you move up the line. Since the RSC Air 1 is at the top of their more traditional line of

interconnects (there's a second, significantly more expensive line called the TARA ISM series), I would expect that the Air 1 is a good example of TARA's attempt at a neutral cable; and it worked *very* well, as the Air 1 is now one of the cables I'll likely turn to as one of the few reference interconnects all others will be compared to.

As with almost every audio component, cable performance is quite system dependent, and some cables are pickier than others. The RSC Air 1 is definitely one of the least finicky cables that I've had the opportunity to use in multiple rigs -- from rig to rig, it remained predictably quite neutral, with deep, solid bass that lays a wonderful foundation for a detailed midrange and smooth, fairly extended treble. It also consistently conveyed at least as broad and filling a headstage as *any* of the other interconnects I've run; and, though not quite as airy as the Acoustic Zen Silver Reference in the first rig I tried them in, the RSC Air 1 has the specific ability to give images (voices and instruments) solid, fleshy presence within the headstage that was matched or surpassed by only a couple of other interconnects I've used.

Though never as devilishly analytical as my current main reference interconnect (the Cardas Neutral Reference), the RSC Air 1 has an advantage over it as an overall general listening cable. Whereas the Neutral Reference can sometimes cleave *too* sharp an edge around images, the RSC Air 1 never does, which gives it the upper hand in terms of conveying the *broad* mood expanse that is Bach's *Goldberg Variations* played by Murray Perahia (Sony Classical SK 89243), which is my favorite recorded performance of it since Gould's legendary and explosive 1955 masterpiece interpretation. Certainly more contemplative and mood-ranging than Gould's 1955, Perahia, in his *Goldberg* (even through the more sprightly pieces, like *Variation 8*), seems to maintain a certain deft softness of touch that absolutely requires organic, round, but clear, boundaries between not only each note and the room, but also between each note and the notes before and after it, in order to convey the full magic of the performance and the gossamer timbre of each key struck. The Cardas Neutral Reference, while certainly not making a harpsichord out of Perahia's Steinway D, gets the "clear" part down pat, but falls behind the RSC Air 1 just a *touch* (but enough to matter) when it comes to the "organic, round, but clear, boundaries" thing. Also, the TARA's broader headstage sets it apart further in this regard, providing a more spacious canvas, and so heightening that sense of distance between every note and the room, as well as allowing the sonic images to breathe in their own space more freely than my main reference interconnect allows.

The RSC Air 1 also has the edge on the Cardas Neutral Reference in terms of excitement downtown. Cue up *The Patriot: The Original Motion Picture Score* (Centropolis/Hollywod HR-62258-2), skip to track 5 (*Redcoats at the Farm and the Death of Thomas*), and be prepared for an opening assault of long-ringing drumming with fairly low bass resonances, followed 1:12 into the track by tower bells and then what sounds like a magnificent, low bass, rolling thunderous backdrop that will rattle not only your eardrums, but also (with the right headphones) the sides of your head. While I can't imagine any cable stifling the impact of this track, the RSC Air 1 brings more authority to the resonant, low snarl of it than all but a couple of the interconnects I've had the pleasure of using in multiple rigs. The same can be said for what it does, relative to my

reference interconnect, for Edgar Meyer's bass in track 4 (*Indecision*) on the *Appalachian Journey* SACD (Sony Classical SS 66782). The track starts with Mark O'Connor (violin) and Yo-Yo Ma (cello) opening with a lighthearted, gentle duet, only to be playfully interrupted by Edgar Meyer's deep bully of a bass. The RSC Air 1 emphasizes the chesty wood-bodied timbre of those first few big bass notes more than the Neutral Reference; the Neutral Reference, in direct comparison, instead focuses a bit more on each and every oscillation of the big bass strings as they peal off of Meyer's fingers -- both are fun, no doubt, but I would guess that most, for the purpose of general listening, would prefer the RSC Air 1's conveyance of Meyer's bass.

One sonic area that the RSC Air 1 takes a bit of a backseat to the Cardas Neutral Reference is in ultimate treble extension and detail. While certainly *not* rolled off at the top, the TARA *just* glances over the tiniest treble details that the Neutral Reference more generously illuminates -- and the Neutral Reference just seems to reach a *wee* bit higher. In the topmost octaves, the Neutral Reference's ability to resolve the finest of edges can often work to its advantage in the right rigs, relative to almost every other interconnect I've ever used. The key part of that last sentence is *in the right rigs*. In the upper octaves, there's a hair-thin line between extracting the last bit of treble detail and being tizzy. The Neutral Reference straddles that line on the good side *in the right rigs*, but can err on the side of tizz in those few setups that were not particularly compatible with it. The RSC Air 1 plays it *just* safe enough to never lapse into the too-trebly side, while still spoon-feeding your ears ample high frequency extension and detail. My current reference rig happens to like the Neutral Reference *a lot*, and its treble derring-do serves it very well in that system, and to some advantage over the RSC Air 1 in this specific regard. But it's that very fine line that would have me recommending the RSC Air 1 over the Neutral Reference to Head-Fi'ers who don't have the practical opportunity to audition both. If treble sizzle and tizz is a big concern of yours -- yet you also equally fear missing out on generous helpings of treble detail -- I would consider the RSC Air 1 a pretty safe bet for you.

Simply Excellent

Relatively simple and unique design, realized through sophisticated execution and materials -- that's TARA Labs' RSC Air 1 interconnect in a nutshell. Of course, none of that would matter a lick if they didn't *sound* good in use. Well, *many* rig configurations, including the use of *many* different interconnects, have confirmed for me that the RSC Air 1's relative neutrality, transparency, timbral finesse, broad headstage, and frequency extension in both directions combine to set an extremely high standard of overall excellence. Would I call them the *best* interconnects I've ever used? In some ways yes, in some ways no; but even for those things where no's the answer, the RSC Air 1 is always within striking distance.

Simply put, the TARA Labs RSC Air 1 interconnect showcased itself as dependably superb, no matter the setup I included them in. If you've got the coin, I feel comfortable concluding that they're a very sound choice for most any rig. The TARA Labs RSC Air

1’s predictably excellent performance makes it an exceptional choice as a reference standard.

NOTE: Of the first group of interconnect cables, several weren't around long enough to run them in multiple setups (including the interconnects by Acoustic Zen and Stealth Audio Cables). Down the road, I may give these cables another go in several different setups to get a better picture of their performance across a variety of rig configurations, as I was able to do with some of the other models, including this TARA Labs RSC Air 1.

Associated Equipment

- **Digital Source:** Sony SCD-C333ES as SACD/CD player and CD transport; Bel Canto DAC2 digital-to-analog converter; MSB GoldLINK III digital-to-analog converter; Creek CD53 CD player/transport; Arcam Diva CD72T CD player/transport; NAD C541i CD player/transport; Music Hall MMF-CD25 CD player/transport; Denon DCM-370 CD player/transport.
- **Headphone Amplifiers:** HeadRoom Max; Brand X v1.0 and v2.0 prototype portable hybrid tube; Audio Alchemy HPA v1.0 with Power Station Two Power Supply; Tangent-built META 42 prototype with interchangeable op-amp feature; Meier Audio Corda PreHead (AD8610 version).
- **Headphones:** Sennheiser HD-600; Etymotic ER-4S; AKG K-340; Sennheiser PXC-250.
- **Cables:** Interconnect (other than RSC Air 1): TARA Labs RSC Reference Gen 2; TARA Labs RSC Air 2; Cardas Neutral Reference; Cardas Golden Cross; Cardas Golden Reference; JPS Labs SuperConductor FX. Headphone: Cardas HD-580/600 cable, Stefan AudioArt Equinox for HD-580/600. AC: Acoustic Zen Tsunami, BPT C-7, TARA Labs RSC Air AC; JPS Labs Power AC+; Cardas Golden Reference Power. Digital: Acoustic Zen MC^2; Cardas Neutral Reference Video; Cardas Lightning 15.
- **Miscellaneous:** Price Wheeler Brick Wall PW8R15AUD series mode surge filter / power conditioner. Balanced Power Technologies (BPT) BP-3 dual balanced power isolator.

Q&A with Garry Lambert

jude: When audio enthusiasts think of TARA Labs, chances are the RSC (rectangular solid core) conductors are the first thing that comes to mind. Garry, can you attempt, in layman's terms, to explain why you use rectangular solid core conductors in your interconnects versus, say, stranded and/or round?

Garry Lambert: Over the last fifteen years we’ve had the opportunity to build the very same cables in prototype form using both Rectangular Solid Core® conductors and round conductor equivalents. You may not know this, but we are the only cable company that has developed a conductor test or measurement system that allows us to compare and

analyze the conductor designs side by side. In these tests and in listening tests also, it is clear that the RSC® conductor is more 'linear' with frequency. We can say that by 'linear', we mean that the high frequencies are extended and that they are at the same level or amplitude as the low frequencies. The fact is that round conductors, by virtue of their shape alone, will roll off high frequencies and a conductor with a rectangular shape does not roll of the high frequencies to the same degree. Okay, but why does this happen? Why does a round conductor roll off more high frequencies than a rectangular conductor? As the signal current goes through a conductor, the larger more uniformly shaped internal area of the round shaped conductor causes the round conductor to have a higher concentration of 'electromagnetic lines of force', which increases the resistance to high frequencies. This doesn't happen to the same degree in the case of the rectangular conductor because there is no uniform large shape around the center of the conductor. It's also important to know that the larger the round conductor is in gauge size, the greater the high frequency loss will be.

jude: Garry, I've used TARA Labs RSC Reference Gen 2 interconnects in my rig, and they are very good for their relatively low price. Can you describe the primary differences between the less-expensive RSC Reference Gen 2 and your Air series? For example, what differences would one see if he cut open a RSC Reference Gen 2 versus a RSC Air 1?

Garry Lambert: The RSC Reference Gen 2 interconnect is based on one of our best cable designs, and over time we've been able to reduce some of the costs associated with the construction of such a complex cable design. The RSC Reference uses a center Teflon® tube with other smaller tubes and rods around the center tube to build up the cables inner construction. The two conductors are spaced within this construction around the center tube and the cable is held together with a number of Teflon binding tapes. The shield goes on over this construction and the cable is complete! However, when we look at the Air Series™ type cables, well they are completely different. A single air-tube is extruded in Teflon complete with its own 'artery'-like channels on the inside wall of the air tube. These channels are used to hold the conductors in place. The construction is so simple, without the build-up of filler rods or additional spacer tubes; no other fillers or tapes are required. The fact is that the Air Series™ cables have a distinct advantage because of their design and the sonic result is much like you would expect; greater clarity, openness and air in the sound.

jude: All of your interconnects are made with copper conductors. Lately there has been a strong emphasis on silver conductors by many cable manufacturers. In general, do you consider copper a more ideal conductor for an audio signal than silver?

Garry Lambert: Copper conductors sound much better than silver conductors for many reasons. When we measure and understand the technical differences that we hear with these different conductor materials, it becomes quite evident that copper is a more ideal material for audio frequencies. The signal transmission characteristics (current vs. phase) in copper tends to complement the natural harmonic structure of music, and the signal transmission characteristics of silver do not. There's no doubt that silver is a more ideal

material for RF signal transmission purposes such as video and digital signals, but when we use silver in analog circuits or audio conductors, the ability of silver to conduct extended high frequency RF information becomes a big disadvantage.

jude: What is your opinion of silver-plated and/or silver-clad copper as an audio conductor?

Garry Lambert: Great for RF transmission purposes. But in analog circuits or audio cables you get non-uniform distribution of current vs. frequency, and out of phase effects in the high frequencies especially. Think about the fact that high frequencies tend to travel toward the outside of the conductor anyway, and then you have silver plating on the outside of the conductor as well… the high frequencies really get moving and the harmonic structure of music is all screwed up.

jude: All of your interconnects and power cords are shielded. How important is shielding in your interconnect and power cord designs?

Garry Lambert: The shielding is very important as it prevents radio frequency interference and Electromagnetic interference from getting into the audio signal within the cables. Radio frequency interference that comes through the walls and into the cables, like rain from above, is called incidental RF. Electromagnetic interference exists primarily in the area behind the components in the system. As I said, the intended purpose of the shield is to keep the interference out of the cable. Some shielding methods are not as good as others; the shield can allow the leakage of RF/EMI energy within the cable like a leaky umbrella. In fact the conductors within the cable are not really isolated from the shield anyway, because the conductors are capacitively coupled to the shield. To say it another way, the conductors and the shield have an energy field between them called capacitance. This means that the conductors can pick up high frequency garbage even with a shield in place, and so a shield doesn’t always work as one might imagine. At TARA Labs, we use a variety of shielding systems, depending on the application and the design of the particular cable in order to maximize the shield’s ability to reject noise and RF/EMI interference.

jude: Garry, can you please explain (again, in layman's terms if possible) TARA Labs' Parallel Shielding System as used in the TARA RSC Air 1 interconnects?

Garry Lambert: In the Parallel Shielding System we utilize a principle not unlike ‘star-grounding’ as used in circuit board design. At the load end (signal receive end), the interconnect shields are connected to chassis ground; but at the source end of the interconnect, cable shields are ‘floating’. By connecting the shields together at the source end we effectively ‘equalize’, channel-to-channel, any electrical potential difference between the conductors and shield. This simple concept creates a lower ‘mono’ noise floor.

jude: I noticed more of an effect with the Parallel Shielding System cables in my office system than in my home system. One of the key differences between the two systems is

that my home system uses balanced power throughout. Might the "cleaning up" of ground through balanced power in my home rig have anything to do with why the effect of the Parallel Shielding System is not as noticeable in my home rig?

Garry Lambert: You're quite right. Because you are using the Power Screen, and it cleans up the ground BEFORE it gets into your system, then there's obviously less work required of the cable shield system. So it would be less noticeable than in a system not using the Power Screen. I can't overstress the importance of ground based noise, Jude. At RF frequencies, ground is not always your friend. [*NOTE from Jude: "Power Screen" is the name of TARA Labs' balanced power isolator. I actually use a BPT BP-3.*]

jude: Speaking of balanced power, you and I discussed on the telephone some time ago the fact that TARA Labs actually manufacturers its own balanced power units. I don't see these specific products mentioned too often (but have seen them on your web site), so I wanted to ask you if you could give us at least a brief description of them, and what advantages they might have over some of the other balanced power units available?

Garry Lambert: There are many advantages. One is that we combine the Ceralex™ RF/EMI absorption devices along with the balanced transformers. This is done with all of the cable runs within the component, in particular taking care of incoming ground as well as the live and neutral runs. Equally important is that we deliberately do not run power amplifiers and other high current devices through the same circuit as source components. Our research shows that combining high current devices (power amplifiers) with high sensitivity devices (preamplifiers, CD transports, etc.) reduces the ability to hear micro-dynamics and therefore affects the soundstage. This is particularly noticeable if both types of devices are run through one balanced transformer.

I would like to thank Garry Lambert for taking the time to answer all my questions.
