



# Studio Connections Carbon Screened Power Cable

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By Dan Worth & Dominic Marsh

**Studio Connections are based in the UK and produce a wide range of cables for home audio use. In this review Dan Worth and Dominic Marsh take a look at the company's Carbon Power cables retailing at £190 for 1m**

# STUDIO CONNECTIONS CARBON POWER CABLE



**S**tudio Connections takes a radically new approach to making cables by centring the design process on how the brain perceives spatial and positional information with sound. They first delved into the biology of how sensory receptors deduce position, distance and depth.

In developing the products, designer Michael Whiteside draws from a BSc in Electronics and over 30 years of recording music, manufacturing cables and building studios that have included recording and mix studios such as the BBC, EMI Abbey Road and King's College, Cambridge.

“The technical result for our cables is that they have very accurate timing across the broad, high frequency spectrum that is essential for our ability to interpret spatial awareness. The musical result is that the cables deliver faithfully, allowing us to hear incredibly natural sound and stereo with realistic dimensions” says Michael.

## System Efficiency and General Implementation

High performance power distribution is not just about providing energy to components in my opinion, but also bonding components together to form a single, cohesive system. This demands providing a stable common reference ground between components and preventing stray voltages and noise occurring between different parts of the system.

All electronic and electrical circuits create electromagnetic fields and noise. If these are not managed in a system then they will propagate throughout the system and cause disturbances. Most equipment and power conditioners use filters to reduce noise emissions. However, noise is rarely nullified into non-existence, and usually residual noise

is reflected or sent to a ground connection or to a chassis.

There is an assumption a system ground has the infinite ability to absorb noise; in reality it is a wire network. Because it connects chassis together, it can minimise noise voltages between components, but it equally transfers noise energy between components as eddy currents. An increase in noise levels always degrades stereo image.

The only way to truly remove all noise from a system is, instead of trying to hard block it or send it somewhere else, is to ensure there are no circuit loops that current can travel around and all the components share a common reference ground. To ensure any interference is dissipated as heat.

## Installation

As mentioned in the previous paragraph strapping the earths to a common location is essential in appraising any power cable and really obtaining the best electrical solution for the components. Known as star earthing, designers have been implementing this technique for many years now within their electronics and distribution mains blocks. My own system a period of time ago consisted of two separate radials for front and back end equipment, with each having a balanced power supply and a filtered block for the front end and a passive for the amps.

Although the sound was terrific and all the equipment fed by seemingly capable and competent products, I could from time to time find myself with a soundstage that didn't produce as accurate an image as I believed should have been presented to me. I had instances of overtones in higher frequencies that had a lack of body and lower notes which felt crumpled and crushed.

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As Michael Whiteside, owner and designer of all Studio Connections products is as obtainable to the public as he is to industry personnel and is responsible for really honing down the wiring of some of our best known studios and theatres, I gave him a call with my concerns and he was as always ready and willing with advice.

We sketched out the systems wiring and immediately his suggestions were to remove the use of one of the radials in the circuit along with one balanced power supply. 'Less is more in this case' Michael stated. I naturally hesitated at this prospect as I believed that keeping the two balanced supplies in place would in fact eliminate crosstalk. Our first step in this case was to take a preliminary approach by strapping the two grounding points inside the balanced supplies to each other. This did not yield any ground breaking results (excuse the pun).

So next I went with Michael's initial plan and removed one of the balanced supplies and negated one of the radials.

The new chain of power was one radial feeding one balanced power supply, two feeds from that supply, one to the front end filtered extension block and the other to my all star wired (neutral and live lines included) passive block for the amps the results were really staggering. Phase and timing was considerably more accurate and instrument tone and timbre was more natural, fluid and dynamically true.

### **Bring in the Carbon Mains Cables**

The installation of the Carbon Screened Mains Cables into my system began as straight forward as any other power cable review. I initially added one to each of my Reference Mono blocks. My first inspection on the sound was that over my previous far more expensive cables from various companies the sound gained solidity in the bass. I felt that initially I was hearing more bass, but during more intense listening it wasn't the levels of bass which increased but more so the timing and accuracy of the bass line which had better energy and more natural dynamics allowing me to ascertain better separation of kick drums over bass and the extension of lower bass was freer and more substantially apparent.

I then proceeded to replace my existing cables back into the amplifiers and

changed the one in the DAC for a SC Carbon. Most notably I understood the vocals better. What I mean is I could feel more emotion and realism in the artist's rendition of the given music. When watching a live band, eye contact from the singer is essential in conveying the emotion that is felt in the lyrics, but we cannot have that with Hifi, as we strive to ascertain the emotion from the description of the vocal and with the SC Carbon in place in my DAC I really felt a good connection with the singer. Not to degrade my other cables at all I could say that at a staggeringly cheap cost I felt that I was retaining a palpability that I had worked so hard to achieve which cost a great deal more previously.

Leaving this cable in place and adding another to the Paul Hynes power supply which keeps my modified Mac sustained. I actually achieved what was a more fleshed out and rich top end. The combination of the two was marvellous and the previous cable in this position being an all silver design was chosen as it gave a fantastically airy feel to the upper registers that I preferred over copper variants previously. The SC Carbon did two things for me, one it gave me a denseness to the frequency extremes in the top end allowing them to become more prominent and articulate and secondly the more natural timbre suddenly exposed to me that the top end previously was in fact over airy and almost overly dispersed. When listening for acoustic air and space in live venues I felt that the sound I was hearing was definitively truer and more representative, almost as if the other silver cable was a bit artificial in its sonic approach.

Of course the next step was to combine the results with the power amplifiers and the front end. Accuracy was at the forefront of the characteristics I was now presented with, accuracy in terms of tone and timbre, with a soundstage which produced dynamic depths and stage placements that made terrific sense. I had achieved a lot of this previously by honing down the grounding and layout of the power circuit chain but this was some time before having the ability to work with several of the SC mains cables. Energy, tactile responsiveness and subtlety combined for a ponderous listen and it was a good 10 days to a week before I remembered that I had yet not installed one of Michael's power cables in the preamp. Up until now I haven't found

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any faults with what I was hearing and my listening joy had taken on a different dimension which was extremely satisfying.

Placing another Carbon cable into the preamp had similar results to adding one to the DAC initially, I felt that from the upper mids to the upper bass I had more dimensionality to the soundstage and band member placement was more sustainably accurate. Dominic popped over for a listen and immediately said that he felt that there was more presence to the overall imaging and that I had achieved a richness in tonality that only comes from good copper cabling which he felt may have always been overshadowed by the flaws of my ceramic tweeters. We swapped different power cables of his and mine in and out a few times and although pronunciations of certain frequencies were adorable with some of the other cords used we both agreed that the full internal loom of the SC power cables had an unforced and naturally energised sound that didn't highlight anything in particular but rather lent its hand to overall frequency expression and simply great timing, which I'll add I didn't think could be achieved by a power cable and especially one at this price.

I contacted Mr. Whiteside again and briefly told him that I was achieving some favourable results from the power cables he had sent me, as we like to keep our reviews close to our chest until release and asked him for some additional cabling which could be hard wired from the balanced power supply to each of the mains blocks and for another from the wall to create a full loom.

On arrival of the extra cables for the full loom, I had my engineer reconfigure the balanced supply to incorporate the additional cables, one for the passive amp extension block and one for the front end filter extension. Results were very favourable indeed. I did lose a little punch in the upper bass in comparison to the previous cabling, but what I lost in punch was substituted with great extension in the bass and better spread of lower waves throughout the room. Better, well, a bit of give and take really, things were slightly different.

The entire loom made complete musical sense to me and flow and sculpture of the soundstage was fantastic, leaving nothing in the mist of background

hashes, with ambient harmonics retaining great stature throughout the soundstage and micro details, maybe a little more rounded but contacting the music and the listener with full ranged articulation. I do like a bit more of a slapstick sound overall, but arguments could easily be raised for both alternatives, especially when concerning myself with the wide range of musical taste I have.

The ever crucial midrange in my system which for me needs to project vocals with absolute tonal balance and clarity, with plenty of transparency and spacial awareness took on a very slightly more natural role in the mix. The upper midrange with female vocalists was a touch calmer and the chestier deeper tones of a males vocal had more grunt and body with the very lowest of their range being slightly more tempered due to the rounder upper bass characteristic of the additional cables in this particular place in my system.

## Conclusion

An F1 car is a piece of engineering greatness ,but it's the culmination of its smaller parts which allows the whole unit to run at its very finest and extract each little piece of performance gains from the overall package. Cabling is very much the same; a good system with poor interconnecting cables will not reveal its true performance and like the F1 car, if all the component parts are not just right, overall performance is degraded. Using the Studio Connections Carbon Screened Power Cables in my system hasn't dramatically changed its ability but it's made the whole package more tactile, has better handling of frequency extremes, has increased image performance extremely naturally and has defined the tonal balance of the overall music in a way that comforts me greatly.

In any high-end system all the small tweaks we make for the better usually add a little bit here and a little bit there to the overall sound and when describing these tweaks and changes it can be perceived that some may overstate the claims. We have to be realistic and understand that a review such as this needs to always be kept in context. Yes, but what is context in today's age of high-end audio, a power cable that costs £3000 or more that adds definition, clarity and body to the sound or a cable that does nearly as well that costs £200, so you decide. **Dan Worth**

I am pleased to inform you that I found a very low noise floor which didn't intrude into the musical performance, the width, depth and placement rendered accurately and silently

## Second Reviewer's Verdict given by Dominic Marsh

I was also called upon to evaluate these Studio Connections Carbon power cords for Hifi Pig and was supplied with enough cables to completely wire my system from wall socket to all IEC inlets throughout, including the input socket to my MS Audio 6 way mains distribution block. Usually we only get submitted to us a single power cord to review, so it was both refreshing and indeed very welcome that Studio Connections made available a whole set which gave a sort of "completeness" to the review, rather than a mere snapshot in total isolation of one cable alone.

Dan hasn't mentioned the Studio Connections power cord's appearance so I will here. It is a refreshing change to see a power cable's outer coat that isn't the ubiquitous expandable mesh sleeving, or some form of squashy rubberized jacket, instead we see what is undoubtedly designed in-house and not bought off any peg, being a smart "candy stripe twist" design in black and silver, so it is instantly recognisable as a Studio Connections product.

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## Sound

As Dan has already done a pretty comprehensive breakdown of the specifications and build parameters, I will take the opportunity to crack on without further ado to give you my perceptions of how these cables performed.

As with any power cord evaluation, my first task is to listen out for any boom or bass overhang that poorly specified and built power cords are prone to. After many hours of listening with real bass heavy music selections I couldn't detect either bass boom or overhang at all, so that tells me there is sufficient gauge of wire within the cable to meet transient current demands. I then focus my attention on the treble regions for noise floor problems, hiss and smearing because that again is a signature trait that poor power cables demonstrate. Treble was clean, clear and free of any congestion or smearing, in fact with these cables installed it made listening to Fink's "Wheels Beneath My Feet" live album a real pleasure because the venue ambiances distinct within each track that was recorded in different venues during one of Fink's many European tours and there was no ambiguity at all that was embedded into the recording of this album and delivered with sweet airy crispness. I listen very carefully to the drummer's rim shots on the snare drum and in addition to the sound of wooden drumstick to the 'skin' of the drum, the body or shell should also be heard in true fidelity – it MUST sound dynamic and taut with natural reverberation decay, which is very hard for a system to be faithful to. With these cables I found Fink's enunciation a good deal more lifelike, with a distinct gruffness to his voice.

Any level of noise floor to me trashes any musical nuances to a large degree and also clouds up the imaging, taking away width, depth and spatial placement qualities of artists and instruments within the sound stage. I am pleased to inform you that I found a very low noise floor which didn't intrude into the musical performance, the width, depth and placement rendered accurately and silently.

Of course, just like Dan I too have a boxful of other assorted power cords to compare with and that gives me an idea where in the great scheme of all things power cord they fit into the marketplace and what competitors if any are there to rival it, so I can form an idea on whether or not they offer good value. At circa £190.00 for a standard 1 metre cable I couldn't find any cable that could directly compare with the Studio Connections Carbon power cord, in fact I was looking at close to four figure priced products that even came close.

To prove that point then I took out all the Studio Connections power cords and fitted a right old mish-mash selection from the spares box, ranging from a £40 cable to a £1,500 cable and it was very obvious the ensemble I put together just didn't have the crisp organic fluidity to the sound the Studio Connections power cords complete set had imparted.

## Conclusion

The Studio Connections Carbon power cord set has acquitted itself very well, with honour too I might add. They are still to this day installed in my system and I am in no rush whatsoever to uninstall them, because for the first time in many years I have a set of power cords that I don't feel the impetus to ask questions about and simply let them get on with the task I have set them, happy in the knowledge it would cost a lot of

additional cash for any kind of tangible improvement over what these cables do, so they really are a fit and forget product so my spare cables box will have an emptying session soon.

I concur wholeheartedly with Dan that these cables offer tremendous value for money considering the returns in sound quality they provide, so I herewith add my endorsement to them.



## AT A GLANCE

**Build Quality:** Unmistakable external appearance, well built

**Sound Quality:** You would have to spend considerably more to best them

**Value For Money:** At £190.00 for a 1 metre cable it really is a no brainer purchase

**Pros:**

Unforced natural sound

Excellent detail retrieval

Very quiet noise floor

Very flexible and visually very appealing

Price to performance ratio is fantastic

Terrific sound quality, an exceptionally low noise floor and great with fast transients. Great performance at sensible money(DM)

**Cons:**

Very difficult to fault at this price or even multiples of it

Price at time of review: £190 + £30 every additional 0.5m

I spent a very long time in thinking of an "against" argument, so let's just say I drew a complete blank here (DM)

## SPECIFICATIONS

**Conductors:** 1.5mm cross sectional area, 47 x 0.22 strands ultra high purity Nordic Copper.

**Insulation :** Brown, Blue, Green/Yellow

**Insulation diameter:** 3mm over dielectric

**Bedding and Primary screen :** 100% coverage, semi-conductor loaded

**Outer Jacket:** Clear PVC

**Drain element:** 0.46mm cross sectional area, 3 x 9 x 0.147 strands tinned copper wire

**Resistance:** Each core: 6.98 ohms/km

**Capacitance:** Core to core: 100pF/m

**Inductance:** Each Core: 26mH/km

**Rated voltage:** 500Vac

**Overall diameter;** 9.75mm