

Carl Tatz Design Acoustic Design, Analysis

& Implementation

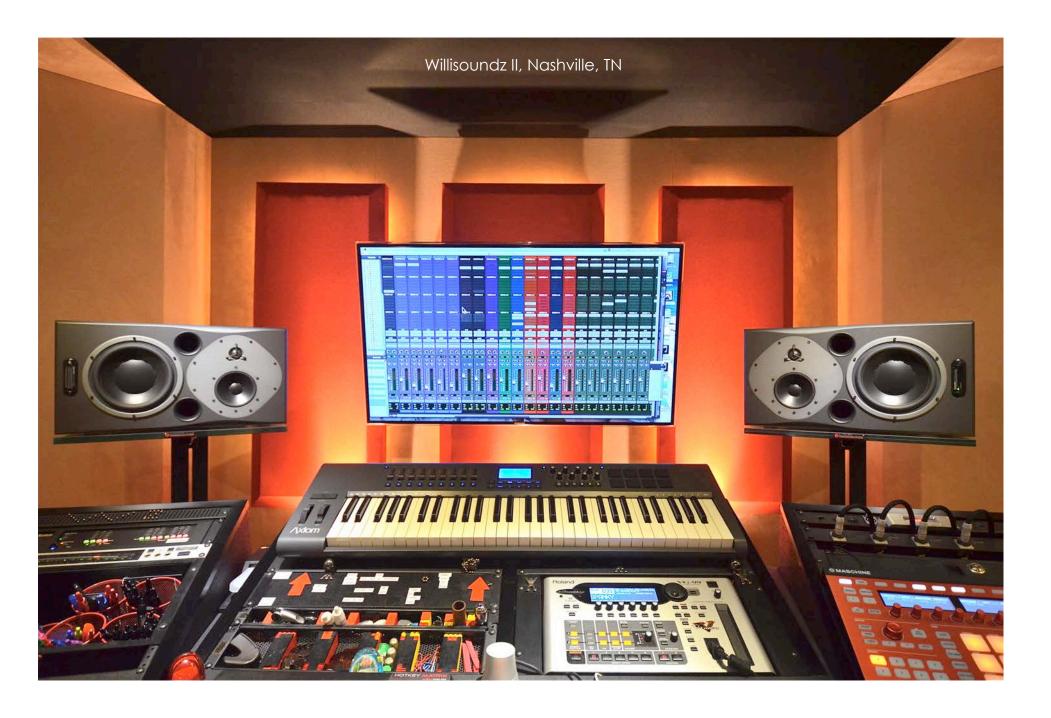
The <u>Ultimate</u> Monitoring Experience

Revolutionary Monitoring Solution With <u>Your</u> Choice of Monitors

"Awesome"

Elliot Scheiner – Engineer (Foo Fighters, The Eagles, Steely Dan)







Yes Master mastering, Nashville, TN, with Lipinski monitors in a Mid-Field PhantomFocus System

The award-winning Blue Grotto, Nashville, TN, with Dynaudio M3 and M1 monitors in a Dual PhantomFocus System



There is no more important element in a control room than accurate monitoring.

"The PhantomFocus™ System (PFSTM) addresses the sonic response of the Acoustic TrinityTM — the relationship between the speaker, the listener and the room - as a single entity, as if it were a new speaker being designed on a test bench in an audio lab, rendering the ultimate monitoring experience. Attempting to optimize these three elements independently rather than by their sum in a monitoring system, is tantamount to acoustic sacrilege and challenges the laws of physics." — Carl Tatz

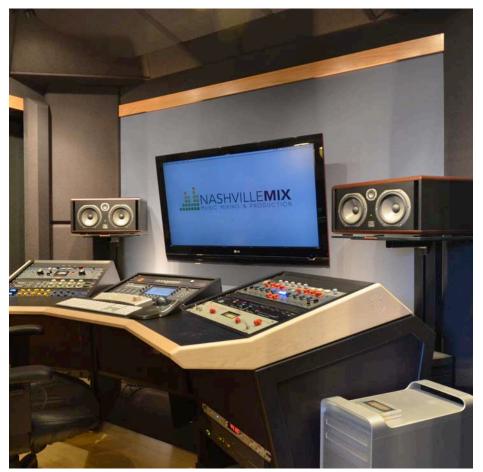
Great speakers in a great room <u>do</u> <u>not</u> equal great monitoring.

Although proper acoustic treatment in a control room is vital to good monitoring, a common myth is that it will "tune" your speakers to accuracy.

Our experience tuning dozens of control room monitors in every imaginable control room environment – from bedrooms to million-dollar recording complexes of our own design or others' – has taught us this: Great speakers in a great room do not equal great monitoring.

The PhantomFocus System is a custom turnkey solution for studios desiring the highest level of monitoring accuracy in their control room environment – any-environment – any speakers!

Utilizing an amalgam of techniques, proprietary protocols, hardware and software, the acclaimed **PhantomFocus System** is a powerful tool in optimizing monitor systems. Without using <u>any</u> sort of psychoacoustic DSP, but rather relying on the laws of physics and powerful high-resolution digital processing, the PFS concentrates on full and accurate frequency response and "reach out and touch the vocalist" imaging where pinpoint detail is spread out before the listener in an almost holographic panorama. Room acoustic evaluation precedes system implementation.



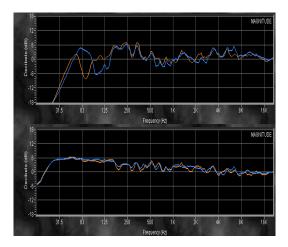


PFS With Focal Twin 6B Monitors

"The **PFS** is absolutely remarkable. Looking back I feel like I was mixing with only a 3-pack of Crayola Crayons, but now I've got the entire spectrum to work with which is so much more exciting." – **Eric Brengle** – **Engineer/Producer/Artist**, **Owner NashvilleMix**, **Nashville**, **TN**

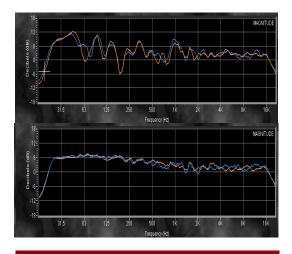
Dual PFS With Dynaudio M3/ Yamaha NS10 Monitors

"After hearing a **PhantomFocus System** using NS10Ms, I was very impressed, and frankly, I didn't expect to be... Awesome!" – **Elliot Scheiner – Engineer (The Eagles, Steely Dan, Foo Fighters)**



Top: Typical frequency response of console mounted near-fields before and after PFS implementation

Bottom: Frequency response of main monitors before and after PFS implementation



Near-field monitoring is the backbone of the studio industry that engineers rely on to make their tracking and mixing decisions. Some near-field speakers are designed to go down to as low as 30Hz; however, in practice, speaker-stand or console-mounted near-fields will invariably result in a severe dip starting at about 100Hz – 150Hz and then return somewhat to their native low-end extension (see graph). This is due to the various low frequency cancelations caused by the boundary effects of floor, walls, ceiling and console bounces, as well as axial room mode interaction.

Therefore, making comments or decisions about low-frequency information is a little like *The Emperor's New Clothes*, and of course it's not just the low-end being distorted by these issues. Then, if a subwoofer is added to extend the low-frequency performance, what you end up with are inaccurate speakers with some low-end.

This is why several speaker manufacturers have offered "auto-tune" DSP to their monitors in an attempt to ameliorate or at least temper these problems, because they realize that it is impossible for them to build a monitor that is immune to fluctuating real-world conditions.

However, it is also impossible to design "autotune" that can be as aggressive and as intuitive as it needs to be. It would be like being able to buy a "mix" software program where you could simply press a button for "Rock," "Pop," "Jazz," "Country," "Hip-Hop," etc., depending on the project you were working on, and it would come out perfect every time.

Introducing the PhantomFocus System – where near-fields become mains

Traditionally, large monitors in a studio have been used to "see what the low-end is doing," and near-fields are used most of the time to make the sonic decisions, with or without a subwoofer.

With the PhantomFocus System, now the engineer can enjoy the intimacy and impact of near-fields along with the enveloping low end of large in-wall monitors – the perfect combination. However, the system goes well beyond that in two ways: One – the listener will be hearing the accurate, anechoic chamber response curve of his speakers in his studio environment for the first time with imaging that has to be heard, not explained (see testimonials). Two – the low frequency extension of the system will be typically around 20Hz – 25Hz. Surprisingly, many large soffit monitors do not go that low.

A Mid-Field PhantomFocus System offers the same qualities as the near-field system but with an enlarged sonic image and longer throw. These systems have been implemented in mastering suites and often used in Dual PhantomFocus Systems where the near-field and mid-field speakers share the same subwoofer system but are tuned separately.

A **Mains PhantomFocus System** may be configured several ways including a **Dual PhantomFocus System**.







Near-Field System

The most popular **PhantomFocus**System choice offers the frequency range of large mains but with the intimacy and impact of near-field speakers. Here the **PFS** is coupled with Dynaudio M1 monitors and a Carl Tatz Signature Series My Auralex control room acoustics package creating the CTD

MixRoom MixRoom, where a former bedroom is transformed rendering spectacular results, down to 25Hz.

"In my career, I have been privileged to work in studios all over the world, but the experience of using the PFS in my MixRoom trumps them all - and at a very affordable cost." – Dream Room Owner/Engineer Bob Bullock (Shania Twain, George Strait, Reba McEntire)

Mid-Field System

Mid-Field Systems deliver the same full frequency response as the Near-Field System but with a wider and larger image. Pictured, a **PFS** is used here with a pair of Quested monitors at Full Moon Studios.

"Carl Tatz installed a Mid-Field
PhantomFocus System in Full Moon
Recording's ICON control room,
utilizing the existing Quested HQ210s.
The results have been amazing; mixes
now have unreal stereo imaging and
insane bass response. The
PhantomFocus System has been the
best investment I have ever made in
my studio!" – Ron Ruane – Full
Moon Recording, Charlottesville,
VA

Main Monitor System

Depending on the studio's goals, the main monitors can either be tuned to maximize the existing monitors, have the low end extended or match the low frequency response of the Near-Fields in **Dual PhantomFocus**System (a Near-Field **PFS** will often have a more extended low end than large mains). Pictured here is the The Gallery at Reba McEntire's Starstruck Studios in Nashville with Boxer T5 monitors.

"With the PhantomFocus System, Carl Tatz has given our mains new purpose. Incredibly, what you hear is what you've got, at <u>any</u> volume – We love it! Our clients love it!" – Cliff Williamson – COO, Reba's Business, Inc., Starstruck Studios, Nashville, TN



All systems using near-fields share identical speaker spacing, tweeterto-tweeter, enhancing image compatibility from system to system.

The Four Basic Systems:

PFS One: 5,000 peak Watts – 114dB for control rooms up to 9,500 cubic feet – 15Hz extension

PFS Two: 4,000 peak Watts – 111dB for control rooms up to 7,400 cubic feet – 20Hz extension

PFS Three: 4,000 peak Watts – 111dB for control rooms up to 5,400 cubic feet – 25Hz extension

PFS Four: 2,000 peak Watts – 105dB for control rooms up to 2,500 cubic feet – 25Hz extension

System choice is based on, but not limited to, the desired sonic muscle and cubic footage of the control room. Any one of the systems can be implemented in a Near-Field, Mid-Field, Mains or Dual Phantom Focus System.

FAQ

Is the PhantomFocus System some sort of DSP-based psychoacoustic effect?

No. Quite simply, it relies on the laws of physics to set up and tune monitors in the listening position, correcting frequency and phase anomalies that are commonly overlooked in studio control rooms.

Are you using an RTA and a graphic EQ to change the frequency response?

Phase and frequency information is measured using a 1/24-octave time domain data analyzer. The tuning is performed by actively adjusting the crossover frequency points, slope and gain while the phase relationship between the speakers and the subwoofer system is continuously monitored assuring a sonically seamless coupling. High-resolution (24 bit/96kHz) digital parametric equalization is applied at the same time toward a target frequency curve followed by a period of critical listening and tweaking.

What hardware is included in the PhantomFocus System?

All Systems include a dual subwoofer system; proprietary formatted digital processor with crossovers, 68-band parametric equalization per channel

and phase control; dampening modules and proprietary speaker stands.

Mid-field systems include the same elements but can require custom stands that are to be determined per implementation.

Soffited Main Monitor Systems may include all of the above without the stands depending on the studio's specific goals.

How long does it take?

Once preliminary consultation and evaluation is complete, on average, two days – the first day for the physical alignment and the second to tune.

Can I use a **PFS One** in a small room?

Absolutely. There is no danger of overpowering the room. You will only benefit from higher performance in the low end.

I already have a sub woofer. Can I use that in the system?

PhantomFocus Systems are custom, turnkey monitoring solutions with carefully matched and time-tested components. Optimum performance may not be relied on outside these parameters.

PHANTOMFOCUS™ SYSTEM TESTIMONIALS

"After hearing a **PhantomFocus System – One** using NS10Ms, I was very impressed and frankly, I didn't expect to be...

Awesome!" – **Elliot Scheiner – Engineer (The Eagles, Steely Dan, Foo Fighters)**

"Once you've heard Carl's system, you'll never listen to music the same way again... **PhantomFocus** puts you intimately in touch with the vocal in a way I have never heard before. It's like they are sitting in your lap, singing to you." – **Jim DeBlanc** – **Chief Engineer**, **Beaird Music Group**, **Nashville**, **TN**

"Carl's tuning system provides me with the confidence that I am working with a true reference point for my mastering work. Of all the equipment I've purchased, **The Phantom Focus System** was by far my best investment." – **Jim Demain** – **Chief Engineer/Owner**, **Yes Master Studios**, **Nashville**, **TN**

"The most important component in a mixing or recording environment is the monitoring system. Without accurate monitoring you don't have the ability to make correct choices. I am truly amazed at the definition of imaging and the tight, clear bottom of the **PhantomFocus System** – I hear what is really there." – **David Thoener** – **Engineer** (**Rob Thomas, Sugarland, Aerosmith**)





"Carl's MixRoom concept featuring the PhantomFocus System is the future of personal studios. In my career, I have been privileged to work in studios all over the world but the MixRoom trumps them all – and at a very affordable price. Incredibly accurate, professional looking, and a total pleasure to use, it has reduced my mixing time dramatically, and with today's reduced budgets that's a big thing!" – Bob Bullock – Engineer and Owner of The Dream Room Studio (Shania Twain, George Strait, Reba McEntire)

"I suspect that many of us have actually never heard what recorded music is supposed to sound like. The **PhantomFocus System** is a new level of clarity and expression and best of all, my mixes hold up on every system. Thanks a ton, Carl!" – **Jim Mayer** – **Producer**/**Engineer**, **Bass Player For Jimmy Buffett**

"The PhantomFocus System is incredibly transparent. When you sit in the sweet spot you can almost reach out and touch the individual tracks. Carl has perfected the art of a professional, accurate listening environment." – Jay DeMarcus – Engineer/Producer - Founding Member and Bass Player of Rascal Flatts, Producer of Chicago XXX





"Carl Tatz implemented his **PhantomFocus System – Four** with our NS10Ms. We were not prepared for the results... Our mixes travel everywhere and we rarely bother with the mains anymore." – **Byron Gallimore – Producer/Engineer (Faith Hill, Tim McGraw, Jo Dee Messina, Jessica Andrews)**

"No one has come to this studio without commenting on the incredibly tight low end and the great image detail of the PFS – except Presley the studio dog. She likes the smooth high end and the treats." – John D. Willis – Engineer/Producer, Willisoundz, Nashville, TN

"The **PhantomFocus System** has become the secret weapon of the studio. By allowing me to track and mix with such confidence, it has without a doubt elevated my final product." – **Erik Herbst** – **Chief Engineer, The Panhandle House, Denton, TX**

"It seemed like a never-ending search for a system that was truly accurate. That search ended with the **PhantomFocus System!!!" – Tom Keifer – Engineer/Producer, Founding Member of the Band Cinderella**

"Carl's **PhantomFocus System** brings out the best in my room, and clients love the results. My monitors are no longer liars!" – **Greg Strizek – Engineer, Verge Recording, Nashville, TN**





"Carl Tatz, with his **PhantomFocus System**, has managed to create a full-range, accurate, musical listening environment that gives me confidence that my mixes are going to sound the way I intend, no matter the destination. He's done two systems for me, and I love them both." – **Kyle Lehning** – **Engineer/Producer** (**Randy Travis**)

"We installed a Mid-Field PhantomFocus System – Three, utilizing our existing Quested HQ210s. The results have been amazing; mixes now have unreal stereo imaging and insane bass response. The PhantomFocus System has been the best investment I have ever made in my studio!" – Ron Ruane – Full Moon Recording, Charlottesville, VA

"For the first time in almost 30 years, I now can accurately hear everything that is on and isn't on the records I am making on a daily basis in my studio. Carl's **PhantomFocus System** is <u>that</u> revealing. Guessing about the low end is a thing of the past." - **Ed Seay – Engineer/Producer (Martina McBride, Ricky Skaggs, Hank Williams, Jr.)**

"The imaging and low-end response of the **PhantomFocus System** is by far the best I have ever monitored on." – **John Jaszcz – Engineer (Kirk Franklin, George Clinton, Roberta Flack)**





"The thing that is the most fun for me is how the center 'channel' feels like a physical presence; as well, I know that our mixes are translating much better out of the building than they ever have. We've got two PhantomFocus Systems, and we love listening to them both!" – King Williams – Chief Broadcast Engineer, Grand Old Opry, Ryman Auditorium

"Carl Tatz Design installed a **PhantomFocus System – Four** in our 5.1 editing and mastering suite, totally transforming the listening environment – perfect monitoring – incredible transparency and clarity, all while delivering an almost tactile emotional impact. I'm a total convert to the **PFS**, and have gone on to install it in my Beverly Hills and Malibu screening rooms." – **Jim Long – Chairman, CrucialMusic Corporation (Music Licensing for Film and Television)**

"Carl Tatz and his **Phantom Focus System** have taken my studio to a whole new level. For the first time, I can completely trust what I am hearing and know that it will translate beyond my system. In a few short months, my clients have clearly noticed the difference. Not only that, but I simply enjoy going to work more than I ever did before." – **Derek West – Engineer/ Producer, Fly By West Studios, Nashville, TN**





"Our Near-Field PhantomFocus System – Four using my existing Tannoy Gold 10s, deliver an accurate, 25Hz-to-20KHz frequency response at the listening position in my control room! It sounds great – I love it, my clients love it, and I know whatever leaves this room will translate well to any other listening environment." – Doug Sarrett – Engineer, Uno Mas Studio, Nashville, TN

"In upgrading our monitor system to accommodate mix work, all our clients said talk to Carl. We did and installed a **Mid Field**PhantomFocus System – Three –with Dynaudio M3 Monitors – full tilt, down to 20Hz, with emotional impact, accuracy and amazing imaging!" – Michael and Laura Morena – Platinim Lab, Nashville, TN

"The **PhantomFocus System** exceeds the expectations of our clients and gives us confidence in knowing that we are hearing the truth in our mix room, surpassing any *big* studio on Music Row." – **Brian Eckert – Owner, Verge Recording, Nashville, TN**

"With the **PhantomFocus System**, Carl Tatz has given our mains new purpose. Incredibly, what you hear is what you've got, at <u>any</u> volume. We love it! Our clients love it!" – **Cliff Williamson** – **COO**, **Reba's Business**, **Inc.**, **Starstruck Studios**, **Nashville**, **TN**





"What really pushed me over the edge in making my decision to implement **PhantomFocus** technology for the monitors I chose for my new room, was a visit to <u>The Grip</u>, belonging to Jay DeMarcus of Rascal Flatts. After being very impressed with the system in the A room, Carl led me to a small editing suite within the personal studio complex called <u>The Cockpit</u> that measured seven feet by nine feet with a slanted ceiling and four-foot-high front wall. I thought to myself that there was no way that this was going to sound anything like what I just heard in the main room. However, when I sat down in the engineer's chair I was not prepared for what I heard – the same tight low end down to 25Hz, pinpoint imaging and reliable frequency response in this essentially ridiculous space – I was sold!" – John Merchant – Engineer/Producer and Educator (Barbra Streisand, Michael Jackson, Celine Dion)

"MTSU's Recording Industry Department is very happy with our new studios D and E. The work that was done by Carl Tatz Design is outstanding. Along with his proprietary **PhantomFocus System** monitor tuning protocol, these two control rooms are now the two best mix spaces that we have on campus." – **Bill Crabtree** – **Department Chair, Middle Tennessee State University**





"This [award for Lecrae's *Gravity*] is our first GRAMMY® and it is also the first album we mixed on our new **PFS**. We owe a big thank you to Carl for showing us a totally new monitoring experience." – **Ben Washer** – **Reach Records**, **Atlanta**, **GA**

"It's clearly the leading technology in monitoring and if I build ten more studios, which I hope I don't, everyone of them will have a **PhantomFocus System** in it – I can't imagine mixing without it." – **Monty Powell – Songwriter/Engineer/Producer, Nashville,** TN

"When you can mix from instinct and taste as opposed to compensating for playback anomalies, the sky is the limit. When it's right on the **PhantomFocus System**, it's right everywhere." – **Michael Kolar – Engineer/Producer/Owner of Soundscape Studios, Chicago, IL**

"Carl implemented his **PhantomFocus System** to shape our critical listening position with pinpoint accuracy and imaging. We now have total confidence in the universal viability of our mixes." – **Ken Barken – Head of Operations, Thirteen Degrees Studio, Nashville, TN**





"The PhantomFocus System monitor tuning protocol is the holy grail of studio monitoring – period... I've never had mixes translate as well as they do from this system, and I feel like I have grown exponentially as a mix engineer since Carl brought his genius to our facility in Ohio. During a recent open house, we had a line similar to a new roller coaster at an amusement park. Just like a roller coaster, the facial expressions were priceless. Typically within the first five seconds, the listener will turn around with their jaw wide open. I actually had to show one listener that there was not a center speaker placed behind the video monitor!" – Mark Abrams – Chief Engineer, Vaughan Music Studios, Columbus, Ohio

"Well, as Carl will attest to, I was a hard sell. I had SERIOUS problems and doubted anyone could fix them. And the results? He knocked it out of the park with the **PhantomFocus System!** It's simply incredible. The only regret is I wished I had done it sooner. Thanks Carl!" – **Ted Curtis** – **Engineer/Producer and Owner Upstairs Productions, Oklahoma City, OK**

"It's as advertised." – James Johnson – Musical Director and Chief Engineer, World Wrestling Entertainment (WWE), Westport, CT





"Any professional educational facility should take serious notice of the **PhantomFocus System**. Our students save so much time not having to second guess their mixes – no more running out to the car or needing to listen on another set of speakers. The **PhantomFocus System** is absolutely invaluable as a teaching tool for our students." – **Glenn Martucci** – **CEO Go Media, Olympia, WA**

"For the longest time I would espouse the use of the 7-foot-tall, half-ton behemoths, known as Cadac speakers. I had doubts whether I would ever again hear the clarity and power from those speakers that I used to mix albums like Supertramp's *Crime Of The Century* or Stanley Clarke's *Journey To Love* etc. Those doubts have finally been erased after hearing a **Near-Field PhantomFocus System** from Carl Tatz Design. At last something new that compares to the best of the past." – **Ken Scott** – **Engineer/Producer** (**The Beatles, Supertramp**)

"What's really crazy is that, in this little bedroom studio, I now have one of the best monitoring systems in the world – it's nuts. I have trouble believing it myself until every time I sit down in front of my PhantomFocus System – it hits me all over again." – Ryan McFadden – Engineer/Producer, Nashville, TN





"After hearing so much about the **PFS** from people whose ears I trust, I was eager to hear the system for myself. Sure enough, the **PFS** was so far beyond my expectations that it's difficult to express. It has unparalleled pinpoint stereo imagery and a depth of field that has to be heard to be believed in both the near-field and mid-field **PFSs**. Finally, it's now possible to really hear all those sonic layers that you take so much time building." – **Bobby**Owsinsky – Engineer/Author

"A lot of the time, unless you're building from scratch, you can't radically change your room. But you CAN change how your monitors react in it. Often, what it takes for people to understand the difference is to either come listen to a **PFS** for themselves, or have someone they really respect recommend it. Everyone who hears it feels the difference is remarkable." – **Russ Long** – **Engineer/Producer/Journalist, Nashville, TN**

After listening to his new **PhantomFocus System** for the first time, Troy Luccketta turned down the monitor pot, swung away from the console and confronted Carl Tatz with a problem – "There's a problem here and the problem is that you're not charging enough for this." – **Troy Luccketta** – **Drummer for Tesla, Engineer/Producer, Nashville, TN**





"I've been putting on some pounds since the **PhantomFocus**System implementation because I no longer have the exercise of constantly rushing out to the car to check my mixes! Now I can relax and have absolute trust in what I hear, and my mix time is greatly reduced. I've had visiting engineers tell me that this is the best monitoring they've ever heard – and they're right!" – Jamie Rosenberg – Engineer/Producer and Great Divide Studio Owner, Aspen, CO

"Everyone who uses the control room is blown away by our **PhantomFocus System's** amazingly detailed imaging and accurate tight bottom down to 25Hz. They just don't expect to hear that kind of performance in such a small room." – **Kevin Reinen** – **Chief Engineer, The Ryman Auditorium, Nashville, TN**

"I had never heard anything like this in my life – monitors that were this accurate and enveloping. I could hear EVERYTHING – from 20Hz-to-20Khz – the good, bad, and ugly, and because of that, I knew immediately that I wanted this precision tool in my new Nashville studio. No piece of gear is as valuable as the critical listening experience that the PFS provides. It's the most important tool in my studio and I couldn't be more excited with how it turned out." – Brandon Metcalf – Engineer/Producer (Secondhand Serenade, Brooke Hogan, and The Classic Crime) Owner, Destiny Studios, Nashville, TN





"I had no idea what to expect from the **Phantom Focus System** and was astonished by the phenomenal accuracy that Carl achieved. My **Dual PFS** is the most honest way to listen to (or more accurately, to experience) music. Since the entire frequency spectrum and stereo field are so flawlessly represented, it gives me as an engineer far more power to sculpt a solid and powerful mix. It exposes every nuance of a performance and has completely changed the way I approach song arrangement, recording and mixing. Having heard the **PFS**, I could honestly never go back to a 'normal' mix environment." – **Sean Spence** – **Engineer/Producer, Owner The Blue Grotto, Nashville, TN**

"The **PFS** is absolutely remarkable. It's a difficult thing to describe because most engineers have never been able to hear everything from 20Hz-to-20kHz before without fighting room modes. Looking back I feel like I was mixing with only a 3-pack of Crayola Crayons, but now I've got the entire spectrum to work with, which is so much more exciting. There's no place for frequencies to hide, so my mixes come together better and faster." **– Eric Brengle – Engineer/Producer/Artist, Owner Nashville, TN**



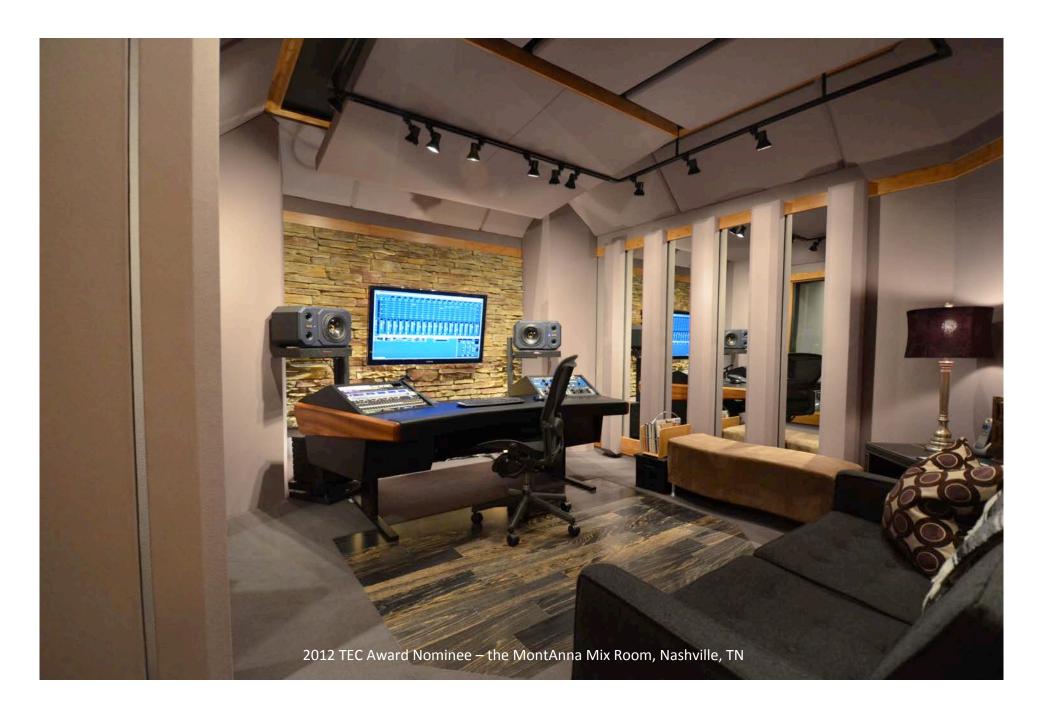


"Since the PhantomFocus System eliminates <u>all</u> of the factors that confuse the sound, I can trust that I am hearing the *entire* sonic picture. Now that I don't have to worry about how mixes will 'translate', I can focus on being musical and creative...which is the whole point, right?! Initially, because the PFS sounded so amazing, I was concerned that my mixes would only sound great in my studio, on my speakers, since the average listener wouldn't be listening back on a **PhantomFocus System**. Even bad mixes sounded good to me at first as far as the imaging and pinpoint detail was concerned. However, I soon realized what an incredible tool I had – that I could REALLY HEAR how bad the mix was and exactly what was needed to correct it." – **Andy Dodd** – **Engineer/ Producer and Songwriter (Kelly Clarkson, Jeremy Camp, Jonas Brothers)** Nashville, TN

"As a small studio owner, mixing and shaping the bass was always a guess. Mix twice, check it in your car, come back and mix again, check it on your iPod, etc. ... The **PFS** advertised promise was that I would be able to really hear what was happening, especially in the low-end BETTER than any high-end studio – and I could have it in my basement. – Carl told the truth! – I don't ever want to mix without a **PFS** again! EVER!!!!" – **Michael Hughes** – **Engineer/Producer, Multi-instrumentalist/Owner Hartwell Studios, Nashville, TN**









† PhantomFocus System



6666 Brookmont Terrace
Suite 1109
Nashville, TN 37205
Phone (615) 354-6242
carltatzdesign.com
carl@carltatzdesign.com
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