

PhantomFocus System



Carl Tatz Design

Acoustic Design, Analysis
& Implementation

A NEW TUNING STANDARD FOR STUDIO MONITORING

World Class Performance in Any Environment
With Your Choice of Monitors

“Awesome”

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





Yes Master mastering, Nashville, with Lipinski monitors in a PhantomFocus System™ Two – Mid Field

High Point Manor, Nashville, with Dynaudio M3 and BM6A monitors in a PhantomFocus System™ Three – Dual



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

Great speakers in a great room do not 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 (**over forty in Nashville alone**) in every imaginable environment - from bedrooms to multi-million dollar recording complexes, to control rooms of our own design - has taught us this: **Great speakers in a great room do not equal great monitoring.** Even after some important laws of acoustics have been obeyed such as identifying and treating first reflections and calculating listening position/speaker placement relative to the axial room modes, room dimensions and wide band low frequency attenuation, the results are always far from ideal.

Until now, many professionals have adhered to frequency curves that have been deemed acceptable rather than what could be.

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 PhantomFocus System is a powerful tool in optimizing monitor systems. **Without using any sort of psychoacoustic DSP, it concentrates first on “reach out and touch the vocalist” imaging** where pinpoint detail is spread out before the listener in an almost holographic panorama. Secondly, full and accurate frequency response is achieved by incorporating several elements that can include: speaker/listener position calculations; proper speakers stands; damping and isolation devices; subwoofer systems; laser alignment; 360 degree phase control (all-pass filter); crossovers; and corrective equalization. The success of the system will only be limited by the room acoustics evaluation that must precede the process.



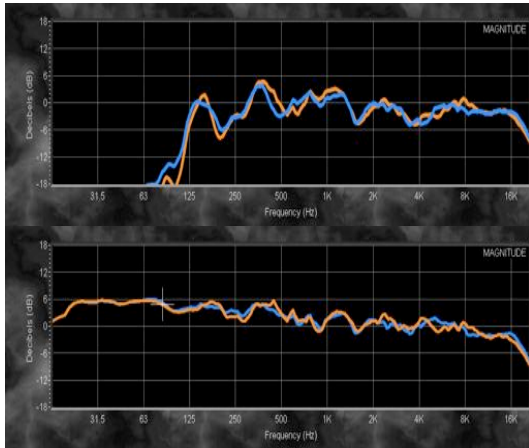
PFS Three – Near Field With Dynaudio M1 Monitors

“The PhantomFocus Monitoring 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 – Founding Member and Bass Player of Super Group Rascal Flatts, Producer of *Chicago XXX***



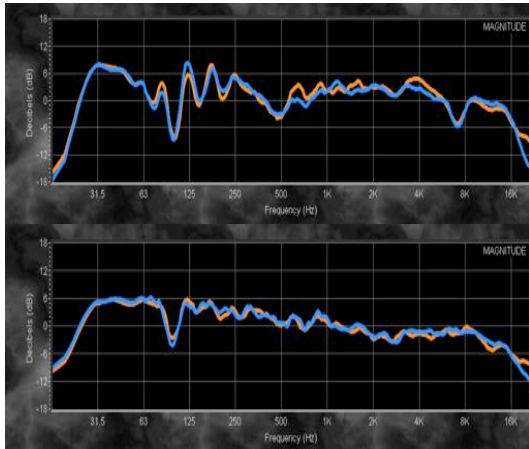
PFS One – Dual With Dynaudio M3/ Yamaha NS10 Monitors

“After hearing a **PhantomFocus System™ One – Near Field** using NS10s, 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 field speakers before and after PFS implementation

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



Introducing the PhantomFocus System™ – Near Field – near fields as mains

Near-field monitoring is the backbone of the studio industry that engineers rely on to make their tracking and mixing decisions. Although some near field speakers are designed to go down as low as 30Hz, in practice that will rarely, if ever, be heard. Most near fields will roll off at about 100Hz or higher because of various 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 is inaccurate speakers with some low end.**

This is why several speaker manufactures have added DSP to their monitors in an attempt to ameliorate these problems, because they realize that it is impossible for them to build a monitor that is immune to real world conditions. **However, it is also impossible to design DSP that can be as aggressive and as intuitive as it needs to be to really tune a serious monitor system – it cannot be sold in a box.**

Introducing the PhantomFocus System™ - Near Field – near fields as mains. Generally speaking, 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.

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 for two reasons: One - he 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 of the system is typically around 20Hz. Surprisingly, many large soffit monitors do not even go that low.

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

The PhantomFocus System – Mains may be configured several ways depending on the studio’s goals. If, after evaluation, the low-end extension is found to be sufficient, the mains can be tuned by themselves using PhantomFocus protocols in crossover gains and digital processing. If the low-end measurements reveal a deficiency, then the appropriate PhantomFocus System will be implemented (no less than a PFS-Three). Or the mains can share the subwoofer system with near fields in a PhantomFocus System – Dual.



Near Field System

The most popular PhantomFocus System choice offers the frequency response of large mains but with the intimacy and impact of near field speakers – the perfect combination. Here a PFS-Four is being used with Mackie monitors in a very modest former dining room studio with spectacular, down to 20Hz, results.

“I have a **PhantomFocus System™ Four** in my home mixing studio (The Dining Room), and cannot say enough about how accurate this monitoring system is. It has truly given me an edge in the quality of my mixes, and it is by far the most important element in my studio!” – **Bob Bullock – Engineer (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. A PFS-Three is used here with a pair of Qusted monitors at Full Moon Studios.

“In October of 2007, Carl Tatz installed a **PhantomFocus System™ Three – Mid Field** in Full Moon Recording's ICON control room, utilizing the existing Qusted 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 a **PhantomFocus System™ - Dual** (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 any 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, tweeter-to-tweeter, enhancing image compatibility from system to system.

The Four Basic Systems:

PFS One: 6,000 peak Watts for control rooms up to 27,000 cubic feet

PFS Two: 3,000 peak Watts for control rooms up to 14,000 cubic feet

PFS Three: 2,000 peak Watts for control rooms up to 7,500 cubic feet

PFS Four: 1,000 peak Watts for control rooms up to 5,500 cubic feet

PFS 1&3 Offer Quad Subs For Smoother Room Response

System choice is based on, but not limited to, the desired sonic muscle and cubic footage of the control room. Any one of them 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. It is quite simply, having your monitors properly set up and tuned, correcting frequency and phase anomalies that are normally ignored in studio control rooms.

Aren't you just using an RTA and a graphic EQ to change the frequency response?

Phase and frequency information is measured using a 24th 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 Near Field Systems include a dual or quad sub-woofer system, high-resolution digital processor with crossover, 21 band parametric equalization and

phase control, custom dampening modules and speaker stands.

Mid Field Systems include a dual or quad subwoofer system, high-resolution digital processor with equalization and phase control and custom-dampening modules (with the stands being arbitrary per the particular monitor size).

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?

On average, two days – the first day to set up and align 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 a 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 elements. Optimum performance may not be relied on outside these parameters.

PHANTOMFOCUS SYSTEM TESTIMONIALS

“After hearing a **PhantomFocus System™ One – Near Field** using NS10s, 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 Beard 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 – (Rob Thomas, Sugarland, Aerosmith)**



“I have a **PhantomFocus System™ Four** in my home mixing studio (The Dining Room), and cannot say enough about how accurate this monitoring system is. It has truly given me an edge in the quality of my mixes, and is by far the most important component in my studio!” – **Bob Bullock – Engineer (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 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**



TESTIMONIALS - continued

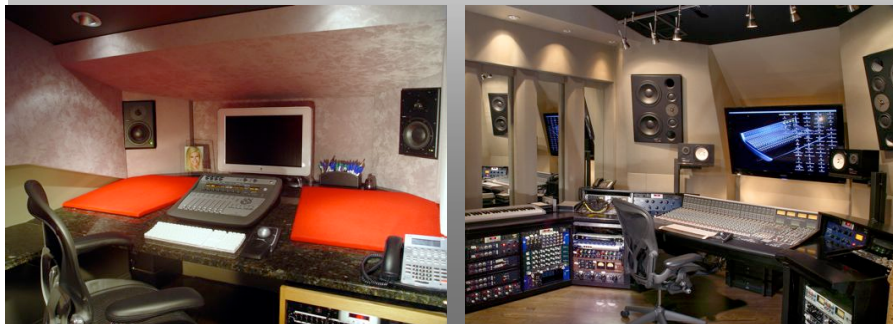
“Carl Tatz implemented his **PhantomFocus™ System Four – Near Field** with our NS-10Ms. We were not prepared for the results... Our mixes travel everywhere and we rarely bother with the mains anymore.” – **Byron Gallimore – Producer/Engineer (Faith Hill, Tim McGraw, Jo Dee Messina, Jessica Andrews)**

“No one has come to this studio without commenting on the incredibly tight low end and the great image detail - 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**

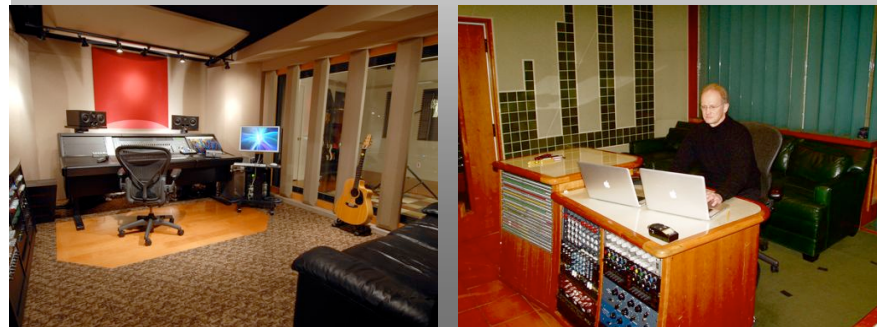


“Carl Tatz, with his **PhantomFocus System™**, has managed to create a full range, accurate, musical listening environment that gives me confidence that my mixes are going to sound the way I intend no matter the destination. He's done two systems for me and I love them both.” – **Kyle Lehning – Engineer/Producer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

“We installed a **PhantomFocus System Three – Mid Field**, utilizing our existing Quedsted 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 that 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)**



TESTIMONIALS - continued

“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 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 **PhantomFocus System™ Four – Near Field** using my existing Tannoy Gold 10s, deliver an accurate, 20Hz 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 **PhantomFocus System™ Three – Mid Field** 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, measuring up to, or 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 any volume. We love it! Our clients love it!” – **Cliff Williamson – COO, Reba's Business, Inc., Starstruck Studios, Nashville, TN**





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