

Audio Acoustics Awesome Sapphire Ti-C & SE model's & their amazingly unique construction & VALUE features expanded:

Worlds First Unique "Double Float" mounted resonance Sapphire HF

The hf unit is mounted on a resonance controlling membrane, which in turn is bonded to the sub front baffle; under this is a second resonance-controlling polymer. This for the first times let's the hf unit function without interference or interacting to devastating effects with the loudspeaker cabinet itself. Further controlling any resonances from within the hf unit, self-allows it to function to new heights. Rudimentary yet completely overlooked to date.

First production "Single Float" mounted Sapphire diaphragm with first titanium voice coil bass/midrange driver

The unprecedented driver is mounted over a bonded single resonance membrane to the cabinet structure. This function further shows a driver is at best 20% of the system only. (All, other aspects addressed naturally i.e. Full Diamond or Sapphire as the diaphragm material with pure pistonic strict motion, this alone exclude 99.9% of transducers as ineffective. Executed without compromise. All materials used to not have a resonance break up frequency within the WHOLE bandwidth of the driver's constructed material. Constraints completely overlooked to date.)

Fundamentally paramount and completely unaccounted to date, is the need to allow the driver to be able to function without compromise or any resonances getting to the component itself thus removing the devastating effects and conditions for it to function in its environment without detriment. When allowed to function properly, components take on a surprising new competence that was but overlooked. I.e. the more you can retrieve from each component by allowing it to function optimally, the more effective naturally it becomes to an amazing extents.

"Resonance controlled" loudspeaker system with acknowledged attention to the first "Active cabinet" and selected system components.

Once we have accepted that even if we produce a cabinet structure, be it out of any material in the periodic table; including Solid Diamond. This would address the hardness factor only that we require; yet we could still not remove the inherent mass of the material and the culprit of storing the energy.

An uncontested fundamental flaw in all conventional cabinets to date however elaborate a material or well founded-period. So arguing over Mdf verses marine ply or Corrine over Carbon fiber etc., is a very moot point indeed in the big picture.

As one is increasing hardness the mass factor is overlooked, hence creating a different sets of problem at the same time as improving one avenue. Well intended and if executed to the extreme relatively successful, agreed; but nonetheless a dated prehistoric approach.

A good analogy comes to mind -one would need a substantial amount of protection with various materials to stop a raging bullet; though something as simple as Kevlar can do so with a limited micron thickness.

In this form if one can isolate the objective the answers are easier to come to, though not necessarily easy to achieve.

For us removing the vessel of energy storage itself. Down to minuscule micro resonances, has concluded that one has to find a vessel in which the energy that will unavoidably become present with any material's with mass and with the incitement of the back wave is removed or never allowed to raise its ugly head. Simple.

This we achieved with clever membranes and polymers composites.





Controlling the incited energy is converted to heat and dissipated. Having this constant equilibrium gives us a cabinet that is a perfect platform for an active driver mounted and allowed to work in its own world (as above) the cabinet functions in its own plane and the Air compliance issues addressed separately. All working in perfect harmony. Three separate issue sharing one goal not three opposing forces working against each other. As far away from convention yes but a radical alternative achievement.

First unprecedented six-layer, double membrane Composite

The cabinet comprises of 30mm material than there is a 2mm resonances controlling developed compound, adjacent to this is another 30 mm material and a second internal membrane bonded to this with a specific adhesives is 2mm of 316 stainless steel that is substantially bolted and adised on and finally a further internal membrane is applied on to these sections to handle air compliance issues. This is done unconventionally by the use of redirecting/absorbing and eliminating any two parallel points within the cabinet structure. No conventional foam/ garneted wool etc. is incorporated. 5 plates are used inside the Sapphire and 10 plates are used in the SE model.

Advanced metallic a gel coat developed.

An 18month program together with a world-renowned British lacquer specialist was undertaken to produce a revolutionary new gel coat metallic a process. Horrendously labor intensive to do with unsurpassed and incomparable end results.

Wow Resonance wired/ Resonance wired

Our finding in controlling resonances is also applied to our reference cable system's the "Wow Resonance" cable system is in turn incorporated into the Sapphire Ti-C SE and the "Resonance" is used in the Sapphire Ti-C.

Optimum vented airflow control port

Air compliance issues were addressed with the combination of the internal membrane and the advanced airflow port system-no longer is the Air compliance within the cabinet a hindrance but a allied to work with. This can only happen when the cabinet is removed from the equation and is no longer a part of the problem.

Custom wound unconventionally

Specified nil tolerance values are achieved. Every component has been meticulously designed and developed from a clean sheet approach. Signal paths are kept as short as feasible.

Nigh on nil Tolerances are achieved by producing specific <0.5% components in larger quantities and than selected down to specific requirement values only.

Components are produced in the England the US, Germany, Sweden and Denmark only using expertise second to none for each specified field.

Though costly and time consuming it guarantees component and end product with specific consistency to the reference tuned system's requirements and musicality.

Nano Pucks

The Nano Puck eradicates resonance being fed into the loudspeaker system from the environment etc., and more importantly removes further the interaction between the function of the loudspeaker and its surroundings, as well as secondary isolation.

Harmonizing to complete the loudspeaker chain in function and form, letting it simply work without resonance interference.



Build

Time wise here is a list to give a indication of the skilled labor involved:

140 hours + Finishing process- 16 gel coat's and base coat preparation process, than very extensive sanding down to a fine finish prior to polishing

80-hour actual construction assembly time.

34 hours in the Ti-C & 68 hours in the SE in actual membrane panel's construction

Extensive CNC time, the elaborate cabinet structure involves substantial times on each individual panel part and complexity of cabinet and assembly.

30 hours in the application of membranes to various components cables ECT.

Testing at each stage to build to our nigh on zero tolerance standard on All components

12 hours detailing time for finished items

4 hours Soak testing on completion. 2 hour careful creating.

QC inspected and finalized by Shabir Bhatti on each item's completion if not constructed by him.

Approximately three hundred and sixty hours to produce

The finest specifically designed and crafted components from around the globe, than add in manufacture times and finest material costing on top.

Compared to a conventional box and driver array that can be assembled in less than 3 hours from start to finish & irrelevant of complexity by skilled personnel. It becomes apparent how much Value for money the audio acoustics products are in these perceived value times.

No other audio product combines dedication and patients involved to hand complete single units to standard.

The Sapphire can only be described as a true Labor of love and all you come into contact can but be moved, touched and inspired by its musical mastery. I look forward to the opportunity to play you your favorite music at your convenience. I guarantee no disappointment. FULL SPEC ONLINE.

Shabir Bhatti

Designer and CEO +44(0) 7968388118



"Carrying out this review has proved an educational as well as an entertaining experience, and has certainly served to broaden my personal hi-fi horizons .

Shabir's speaker is a remarkable achievement, and a tribute to the passion and enthusiasm of the man "

I dare say there are those out there who like Shabir, will be unwilling to settle for anything less once they've heard the results.

Mr Paul Messenger
hi-fi+ issue 39 2005



"the results were quite sensational - the dramatic realism of voices and instruments was truly magical"

"Not only did the sound now possess awesome dynamic expression, alongside a remarkably low noise floor with spectacularly precise and delicate imaging, it also sounded beautifully neutral and well balanced too. I was really getting into some favorite CDs almost as though for the very first time - which is a rare and i value."

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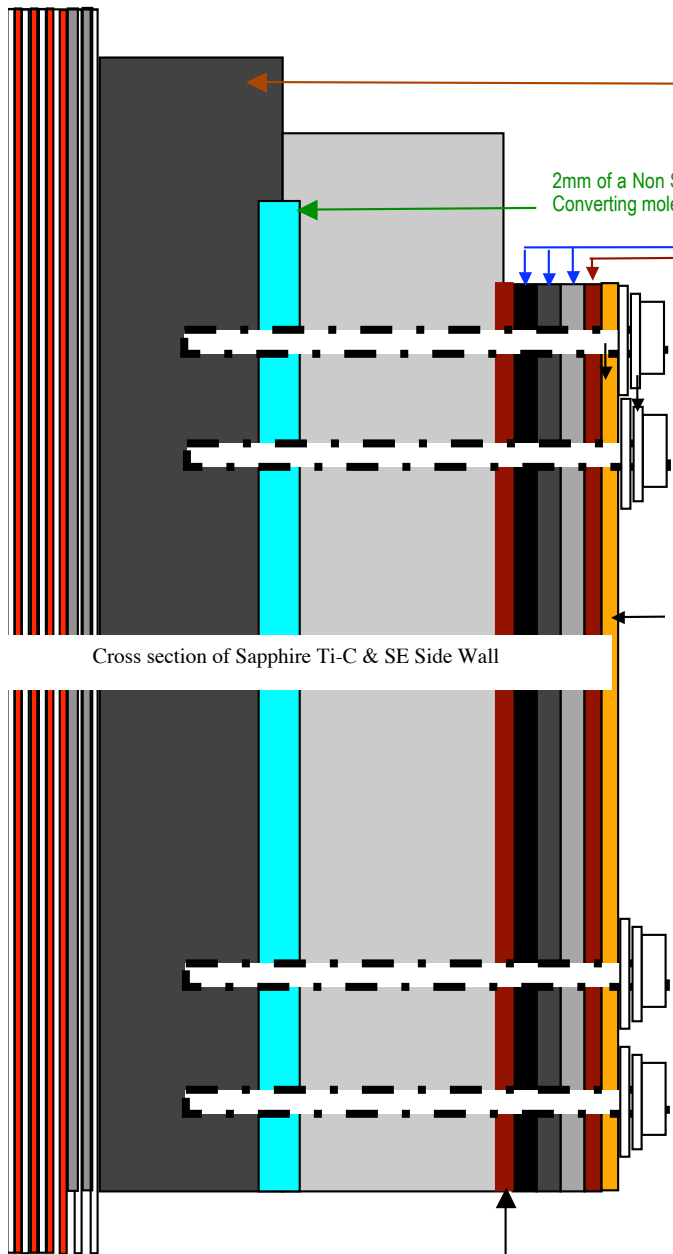
"If the external appearance is quite beautiful, the real heart of this design lies in the complex construction of these enclosures."

"Shabir has (obsessionally) ticked all the right boxes in his quest to create the ultimate loudspeaker."

Crucially, how does it pan out in practice? Potentially very well, it must be said."

Mr Paul Messenger hi-fi+ issue 39 2005

Sapphire Ti-C & Ti-C SE Cabinet Section and HF Mount Section:



Cross section of Sapphire Ti-C & SE Side Wall

2 x 30 mm HDF-The cabinet material is of relative minute importance once one realises that in the absolute requirements of rigidity and mass even diamond /or Nano tubes -is NOT a workable solution and a solution composite is the only avenue to produce a structure that can not be incited by the back wave and remain at a equilibrium of energy incitement at all times to function as a constant un-incited structure for a loudspeaker or for that matter any other electronic enclosure. So until the day we can create the stiffness of diamond but with zero mass we need a solution. Something the sapphire demonstrates clearly over ALL current designs with total Lack of cabinet presence.

2mm of a Non Specific developed polymer is used in specific ratios as the first integral part of this elaborate structure. Converting molecular level vibration incitement into heat to be dissipated.

5 in the Ti-C and 10 2mm 316 stainless steel pads are used to bond the layers of membrane, resin/polyurethanes adhesives and internal acoustics membrane to.

A unique fixing construction system had to be devised for the complexity of construction.

Two /Three layers of specific thickness developed membrane of 0.5 mm and 1.5mm in ti-c and 0.5 mm+1.5mm x 2 are bonded together to form a plate. This further balances the mass of the cabinet material to convert resonances into further heat and keep the cabinet mass un-incited at all times in relation to keeping a resonance free structure

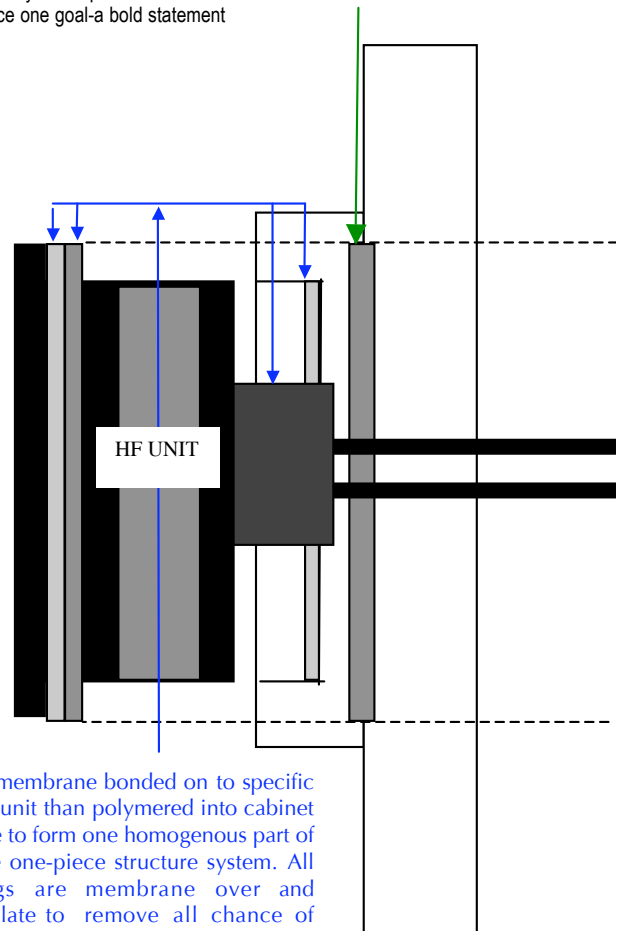
A specific damped rubber based panel is used to address the back wave air compliance issues, this is done with the panel diffracting the back wave, absorbing and also redirecting or defusing-This in conjunction with the Airflow port workings takes the issue of air compliance to new heights offering a level of speed, accuracy and total lack of colouration down into the lowest octaves. Something only address in conventional designs down to the upper midband at best though incorrect. Unlike convention Air compliance, cabinet structure, and driver/electronics do not work "together" but our findings are they are separate entities all working on there own to produce one goal-a bold statement indeed.

2mm of a Non Specific developed polymer stops any finite incited resonances getting though the cabinet structure to the hf unit and "pots/encapsulates" the hf from its environment and itself to let the hf function as if it were in a vacuum jar giving unconventional anechoic chamber performance.

Polyurethane developed full bond adhesive with super bond combined with acoustic integrating properties

After substantial CNC times, all cabinets are fine DA sanded than followed by hand sanding for a perfect prepared surface for the extensive finishing process. This is followed by a two-week base polymer primer process where 4 polyester base coats are applied and re -finished in between each coat. After a further 7 to 10 days of drying time the 4 colour coats are applied followed by the 4-6 unique Gel developed Top coats. A two-week labour extensive sanding process follows this from rough grit to a fine grit sanding process as used in stone masonry. Once sanded to perfection the polishing sealers and top polish is applied to achieve a durable and finitely beautiful Finnish with a mirror unsurpassed end result.

A True Labour of Love and patients.



0.5mm membrane bonded on to specific seal, Hf unit than polymered into cabinet structure to form one homogenous part of a whole one-piece structure system. All workings are membrane over and encapsulate to remove all chance of resonances getting to the core working parts.

The gel coat options:



Krystal Metallic a



Carbon Black



Titanium Metallic a



Mirabelle



Price UK Inc Vat 17.5%
Sapphire Ti-C £32'000

Sapphire TI-C SE £64'000
Including 6 x Nano Pucks