AUDIO REVIEWS

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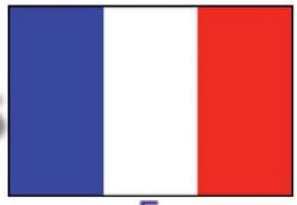
January 2012

Atohm GT1 & V38s

Country of Origin

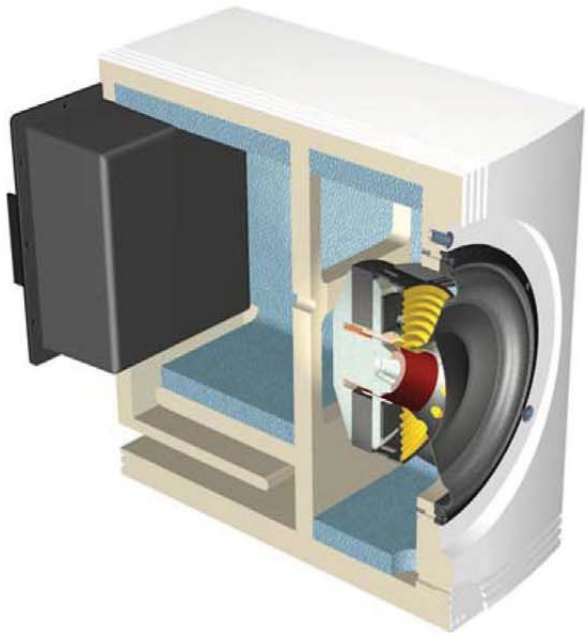


France

Reviewer: Joël Chevassus
Financial Interests: click here
Source: Apple iMac, Squeezebox Touch modified + Welborne Labs PSU, Jadis JD2 Drive, Yamamoto Sound Craft YDA-01, *Audio GD Ref 5* [on loan], Totaldac, Trends UD-10.1
Amp/preamp: Wyred4Sound STP-SE, SPL Volume2, Orpheus Lab Three M, *Stormaudio RI-70* [on loan], Trends TA-10.2, Hiraga Le Monstre
Speakers: Triangle Magellan Duetto, *Atohm GT1 & Rafale V38s* [on review]
Cables: Legato digital cable, Naturelle Audio digital cable, Naturelle Audio interconnects Live 8 MK2, Audio Art SC-5 SE speaker cables, Legato Precision speaker cables, Legato Fluidita interconnects
Power cords: Audio Art Power 1 SE.
Stands & room: DIY stuff, Triangle TS400 stands, Vicoustic panels
Review component retail in France: €2,500/pr + €890 for subwoofer (prices may vary according to country and VAT)

ATOHM®

Context. Atohm was founded by designer Thierry Comte and is based in France's Eastern part of Besançon. Atohm speakers are fully designed and manufactured in-house like those other more famous French players Focal, Triangle, Cabasse and Davis. In fact Atohm remains one of the few small manufacturers who still fabricate their very own transducers. Atohm also markets those for DIY and sells complete speaker kits which the end user merely needs assemble. In this area Atohm has won a solid domestic recognition as is the case for Davis in Europe or Usher in the US. Other French manufacturers currently relying on Atohm drivers are Waterfall and Show Max.



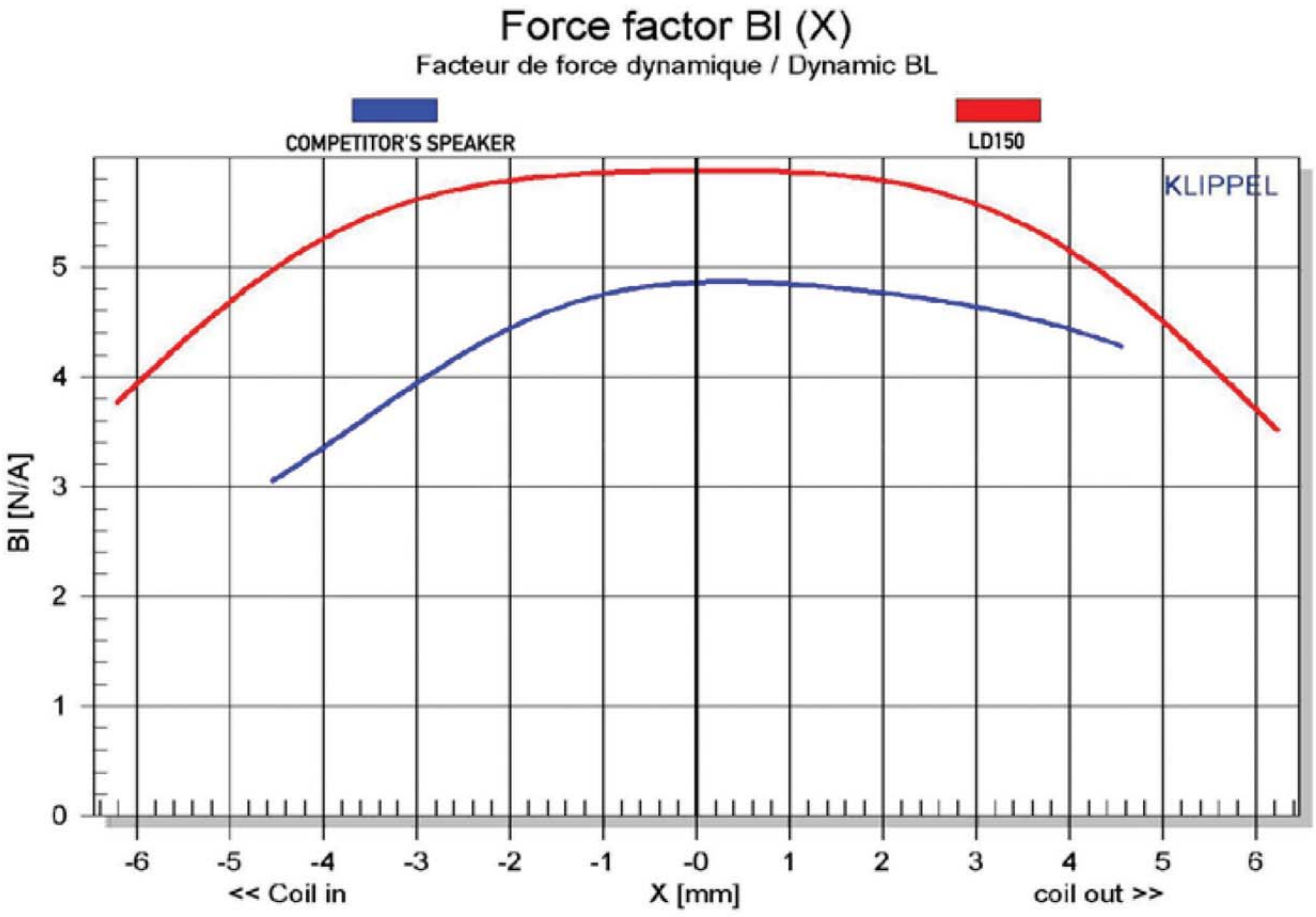
Subwoofer cutaway and rear panel of monitor

Thierry Comte started his career in the loudspeaker industry as technical director for Triangle Industries from 1995 to 2000. In 1996 Thierry Comte met Cedric Aubriot (current CEO of Waterfall) and developed a great friendship and technical partnership. With Triangle Comte had acquired experience and technical background in loudspeakers manufacturing. By early 2000 he decided to explore new horizons. After a short joint partnership with Onix/Asia he founded Welcohm Technology, then registered the Atohm trademark.

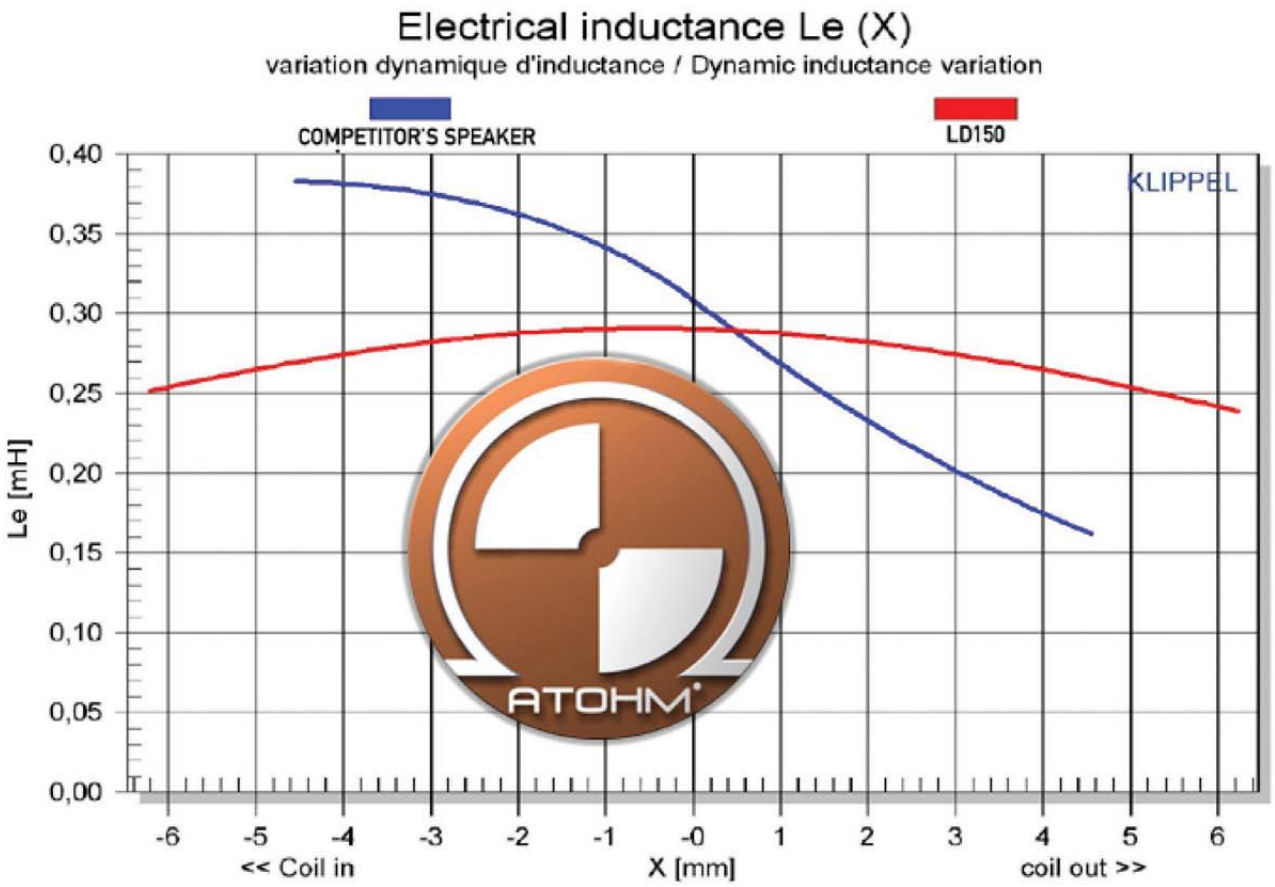
Again, the company began in the drive unit OEM/DIY sectors and for finished speakers focused mainly on kits. Its main OEM clients were Waterfall and Onix but also more famous brands like Triangle or Elipson. By 2004 Thierry Comte decided to enhance sales of kits to make Welcohm Technology a complete loudspeaker company of also finished speakers. For a few years Welcohm Technology marketed very competitive affordable products that were available finished and as kits. Some of the latter became rather ambitious models in their own right like the year 2005 Atohm Diablo [right] whose price must have driven the competition insane. It was a real bargain for the happy few who enjoyed the performance of this full-range loudspeaker.

The range of product which cannot be sold in kit form was the last release of the *Bizontine* (originated from Besançon) company. The *Grand Thrill* series of GT2 and GT3 floorstanders and GT1 bookshelf is Atohm's current flagship offering [above left].

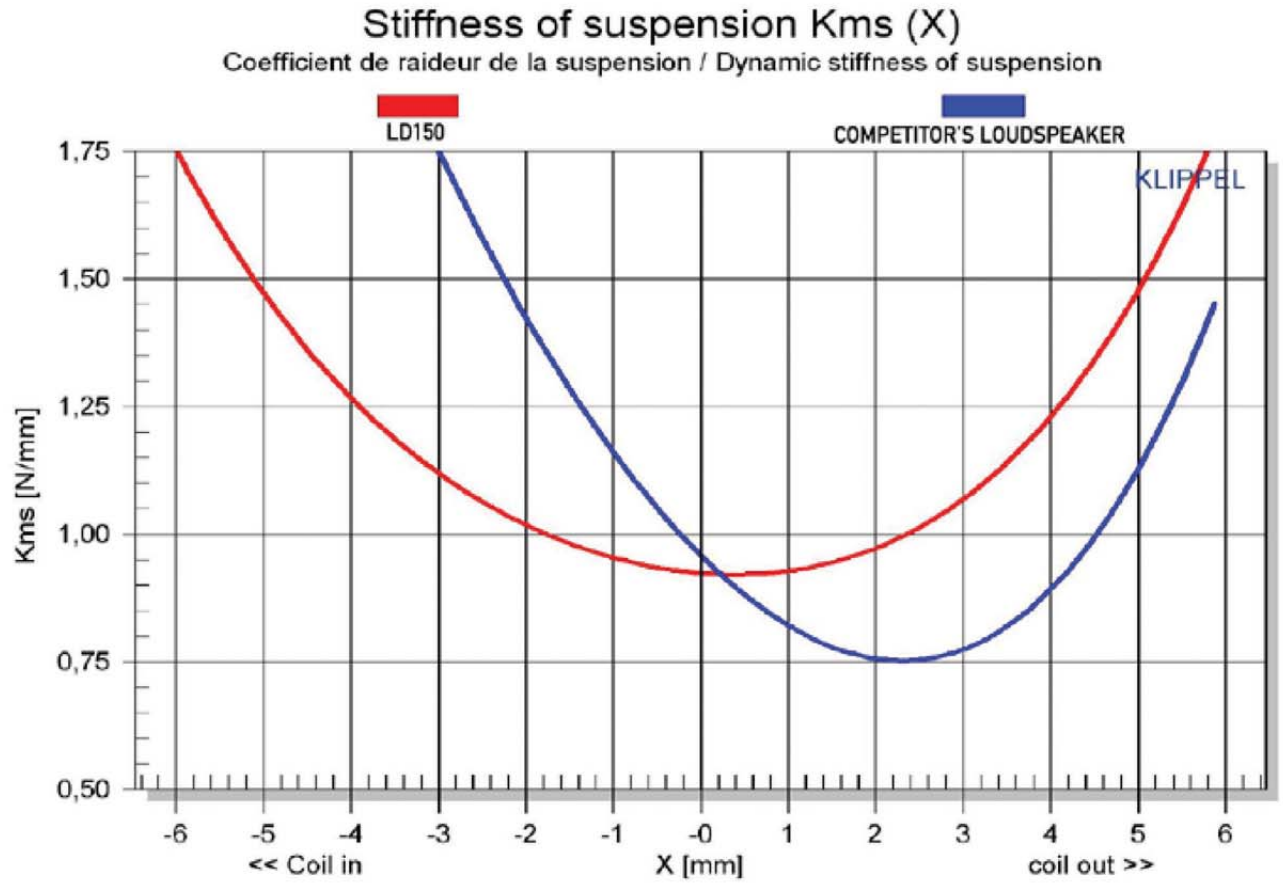
Thierry Comte's lab is equipped with the most modern tools available to conduct and achieve high-quality design work and engineering for drivers and enclosures to make the GT line a very competitive proposal in the high-end sector.



As a serious designer Thierry Comte generally takes his time before releasing a new transducer or speaker. It took him three years to launch the new Atohm GT series. When high-end prices became more and more exclusive boosted by growing upscale Asian imports, a few domestic manufacturers kept an eye on the local market potential. Atohm belongs to these. Thierry Comte likes direct relationships with customers and resellers. If you'll allow this writer a few proud nationalist comments, simplicity, honesty and accuracy are salient features of the Eastern French. One day I would like to take the opportunity and present some other plain Eastern guys who are involved with truly accurate high-end products such as the Fusilier family of JMF Audio or Jean-Jacques Bacquet with Klinger Favre and who have built up solid reputations amongst the most demanding professional studios around the world.

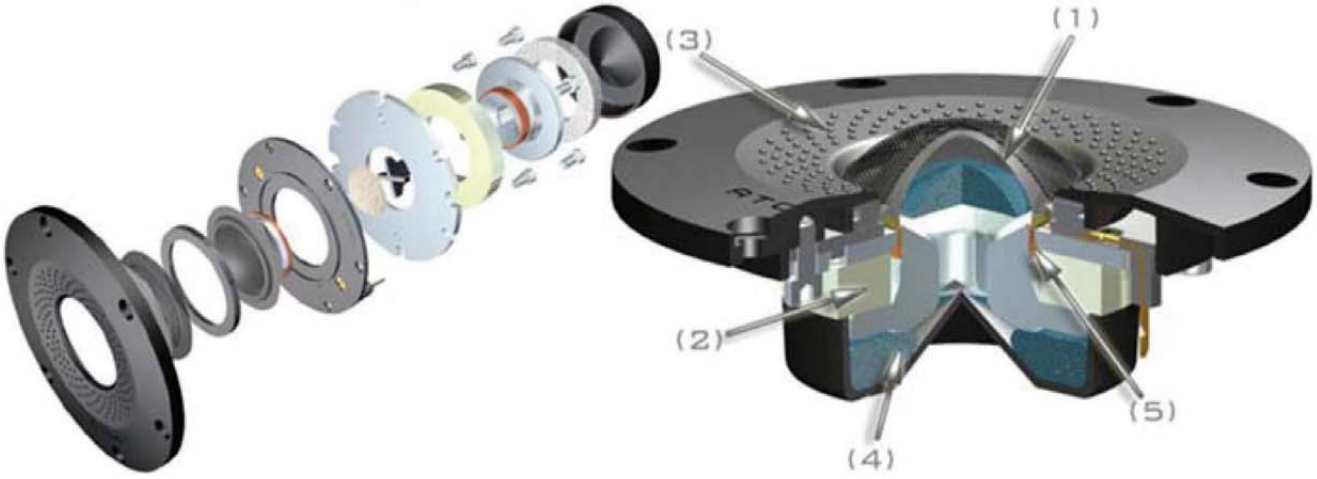


Eastern France has always been dedicated to accurate production of watches and crystal glass. Many generations have anchored this focus in the traditional industrial Franche-Comté region and their know-how is jealously protected and preserved. That's true also for the loudspeaker industry which counts amongst it a significant number of manufacturers. Thierry Comte decided to pursue a less exclusive market than recording studios and Asian high-enders but his consciousness and seriousness of design and manufacture follow the same 'Eastern' precedents.



Description. The GT 1 is a very compact attractive two-way bass reflex monitor. Compared to previous models this Atohm draws particular attention to its cabinet which purposefully conveys how very decisively the GT series belongs to the high-end segment. Available finishes include white and black lacquer and the 'Rosewood' skins of my loaner pair. To acquire anything more prestigious in such a small enclosure would require reaching for a Sonus Faber Guarneri where price tag and required amplification completely alter the game. Make no mistake, for the money asked even the toughest critic wouldn't find fault with Atohm's fit and finish. Thierry Compte decided on a double grill system to meet the demands of different owners. You have the choice of a simple circular grill which fits directly atop the woofer—the tweeter already sports an integral metal perf protection—or a more traditional complete coverage grill magnetically held in place. Both are provided standard. In my opinion the only aesthetic detail that might still be perfected are the three visible magnets which could have been concealed beneath the surface.

Although compact the GT 1 includes a type of plinth which serves multiple functions. It strengthens the overall structure's rigidity, supports the crossover and contributes to the progressive damping of the rear wave. The cabinet is internally lined with cotton felt and filled with Dacron patches to optimize internal absorption of reflections. The rear port sits behind and just below the tweeter and as such just above the two WBT binding posts and an unusually large aluminium knob which acts as 3-position switch to modify the speaker's response by +/-1.5dB in the 1500Hz – 30kHz band referred to as soft, linear and high definition settings.



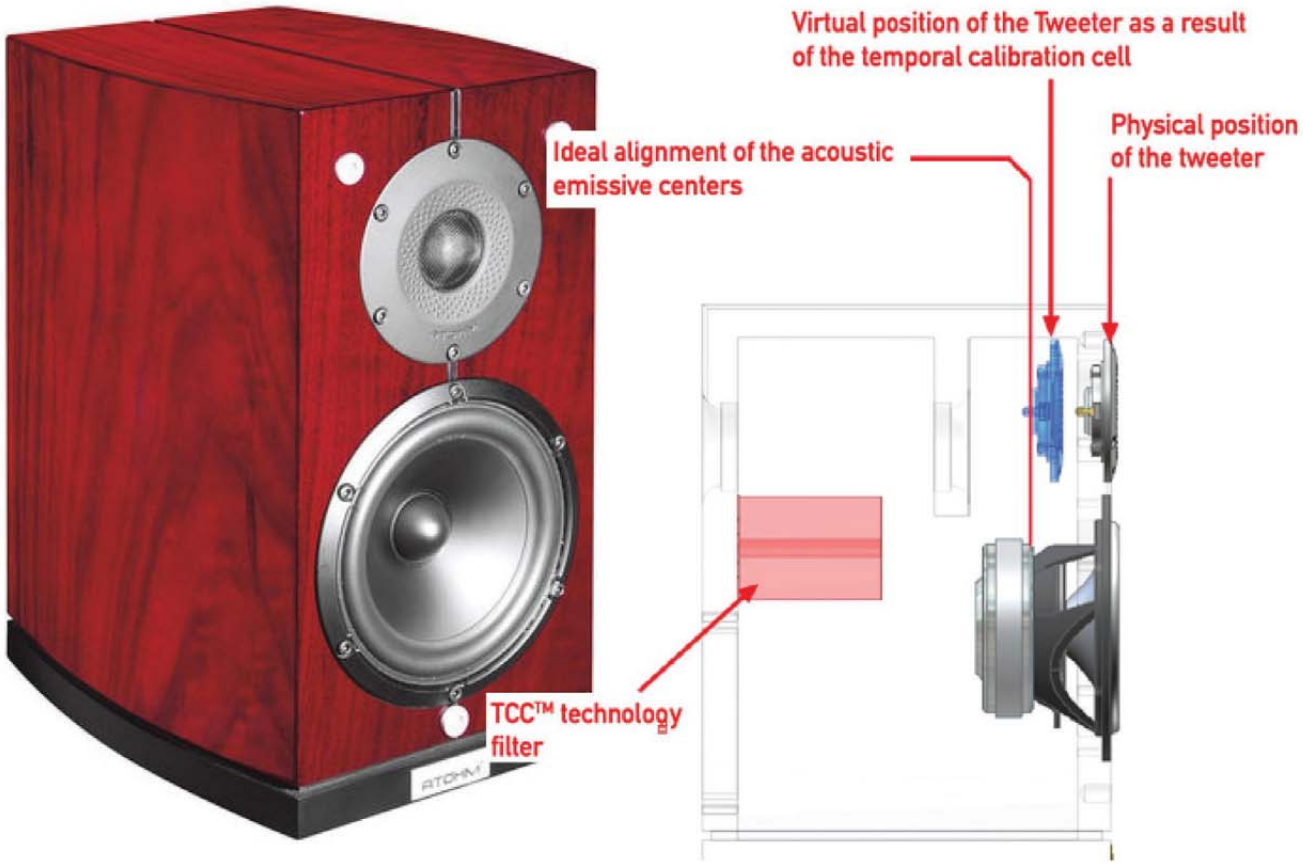
The GT1 is fitted with two drivers of Atohm's top *Absolute Series*. The upper frequencies from 2.000 – 30.000Hz are handled by a new direct-radiating tweeter, a 28mm silk dome equipped with a *very* powerful neodymium ring motor to achieve 98dB/2.83V/1m sensitivity without any horn loading or compression chamber.

This equates to a greater than 17.000 gauss magnetic field for high dynamics with very limited thermal compression. The voice coil is made from an aluminium/copper alloy. Parasitic voice coil behavior was taking into account to achieve very low inductance regardless of coil position in the gap. For significant distortion reduction it is also an underhung voice coil design whose coil is a lot shorter than the magnetic gap to insure consistent application of electromotive force whereby the coil regardless of excursion never leaves the gap. The tweeter mounting plate is cast dimpled aluminium for high rigidity and *anamorphic dispersion patterns* or ADP™, Atohm's term for improved off-axis dispersion and limited spurious reflections at very high frequencies.

The mid/woofer is a 13cm unit with special alloy membrane and non-conductive Nomex/Kapton former on the 25mm voice coil for pistonic behavior over the required bandwidth. The preference for a more rigid membrane than paper or Kevlar reflects the desire for manufacturing consistency over driver to driver precision. Bandwidth here covers 30 to 4.000Hz. This 4Ω version (the same driver in the GT2 tower operates as 8Ω) has a sensitivity level of 91dB/2.83V/1m. It was carefully engineered to minimize distortion, unwanted resonances and guarantee high power handling. It also uses patented ADP™ technology. The basket is made from cast aluminium with a very high stiffness index. And the suspensions on Atohm drivers provide progressive compliance particularly over the critical range between 700 and 1.800Hz.

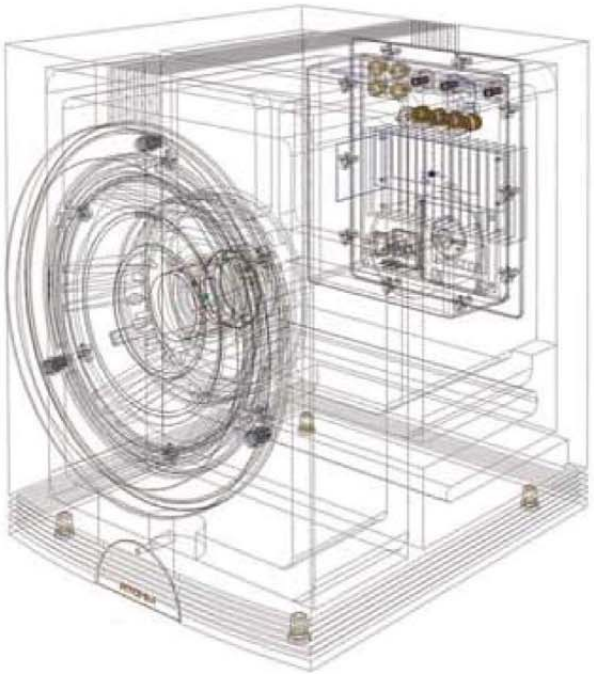
Thierry Comte employs numerous simulations and laser interferometry measurements to determine and optimize the geometry of all mechanical and moving parts. The chief goal is to achieve highest linearity over the entire bandwidth before employing secondary filter optimization. This design capability and engineering focus differentiates Atohm from other small speaker houses who must rely on OEM drivers where the only variables they may truly manipulate or 'personalize' are the enclosure geometry and crossover. A further example of Atohm's seriousness is 0.8dB matching of each pair of these monitors which isn't common in this price range.

Many investigations in the field of mechanics have led Thierry Comte to believe that while the physical properties of the membrane certainly influence the frequency response, the overall result is very much conditioned by the rigidity and length of the voice coil former, coil winding features, type and amount of glue used for driver assembly and cabinet joints as well as the geometry, weight and viscoelastic properties of the driver suspensions. All moving parts interact as a "whole unique entity" as he put it. For best results it thus becomes necessary to optimize each contributor to this picture whilst remaining focused on reliability and manufacturability.



The GT 1's crossover benefits from experience accumulated during the development of previous models and extensive listening sessions. Atohm's specific TCC™ or *Time Coherent Crossover* was optimized to match the treble and mid/woofer on phase, group delay and pulse mode. Contrary to conventional crossovers which only adjust phase so that the response remains linear, Atohm's patented filtering focuses on time alignment. This technical solution is based on a specific *delay line* applied to the tweeter to create the same time origin as the midrange driver. This specific time shift of the tweeter accomplished inside the enclosure creates a noticeable improvement of phase. This special component also allows the use of a 1st-order 6dB/octave electrical filter for minimum phase shift and group delay at the crossover point. The TCC design is said to result in a more accurate and holographic soundstage and a

more seamless driver blend. Final specs are 100/200w nominal/peak power handling, 89dB sensitivity and 45 – 30.000Hz response at –3dB.



The V38s subwoofer is fitted with a single front-firing 23cm woofer. Its powerful magnet is nearly as large as the membrane diameter. The specs indicate stunning excursion capabilities of +/-10mm in linear mode and +/-18mm on peaks. The 23cm cone maintains stiffness during such huge excursions through a series of proprietary Atohm technologies such as their specific spider and *Low Diffraction Surrounding* LDS suspension.

This driver's bandwidth is 30 to 200Hz. The cabinet is a classic bass reflex design available in black or white satin with a rear firing laminar airflow port for quieter operation. The built-in amplifier is a typical B&O ICEpower™ module delivering a comfortably useful output of 300 watts into 4Ω.

Considering its low €890 price the V38s is rather versatile. First there's an auto-start function which relies on signal sensing to turn itself on or off. The rear panel then offers many settings to fine-tune the response though EQ and room correction functions are omitted as is a high-pass to roll out the bass to small monitors. But there are three different active filters for various application. *Closed mode* invokes a 2nd-order low pass to extend the LF response. *Vented mode* inserts a 12dB/octave subsonic high-pass filter to limit excursions below 30Hz. Finally *full mode* provides linear gain across the useful bandwidth.

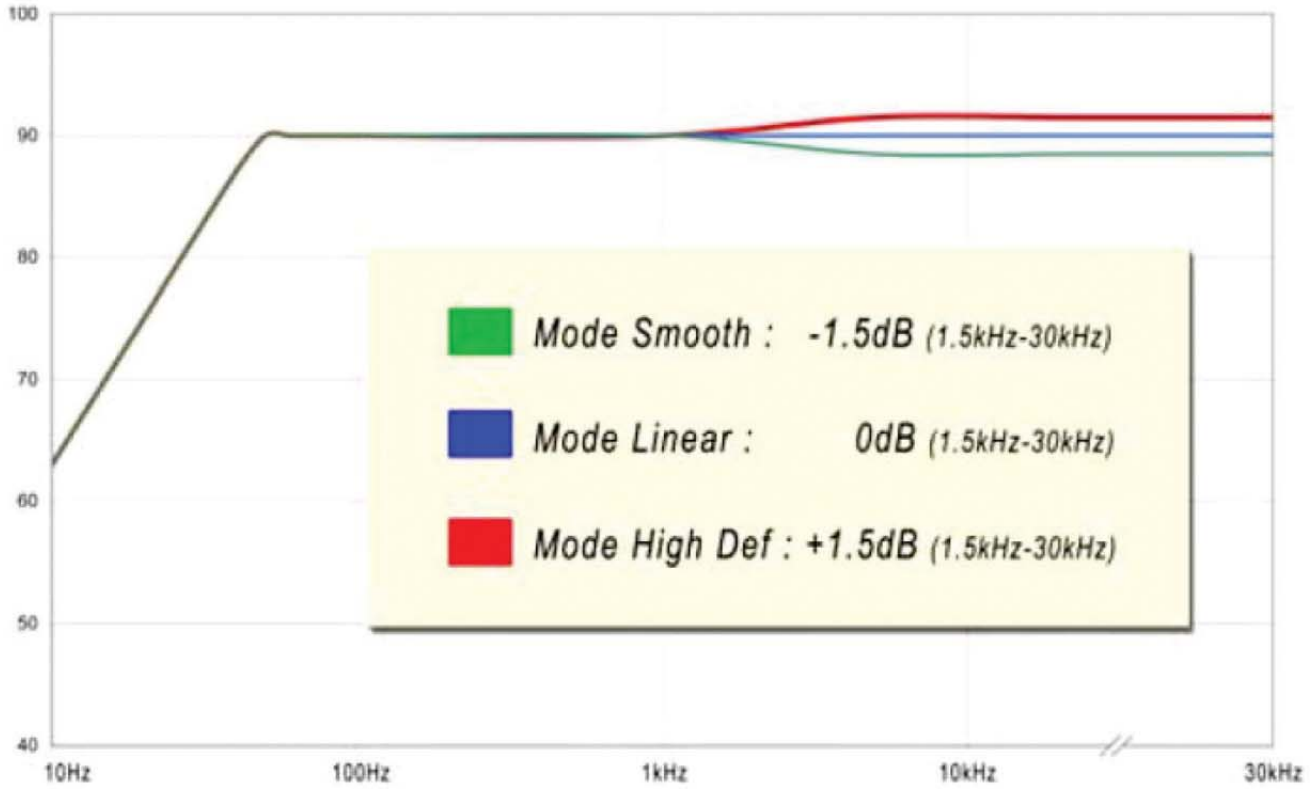
Having a closer look at the rear panel and moving from left to right along the top row, the various settings are direct input switch, active filter switch, slope switch (LFE 12dB or 24dB/octave), auto-start switch, low-pass filter control, phase (0–180°) and gain. In the second row one finds the low-level RCA input and a direct RCA input to bypass all internal filters. The third row includes the high-level inputs and a balanced direct input. The specs further include a 90dB S/N ratio (A weighted) and 0.02% of THD (1kHz/1w).

Sound. This kind of compact monitor occasionally provides completely unexpected sonic results and less frequently a big surprise. The Atohm GT1 belonged to this second category. Its most surprising features were extended bandwidth, linearity and phase coherence. This provided an impression of pleasing tonal richness without obvious limitations or emphasis and a wide holographic soundstage. Given its small size the GT1 also achieved decent bass without any resonance excitation. The GT1 performed like a very friendly and comfortable speaker that made it seem difficult to ever sound harsh or dull. I would not qualify its sonic signature as strictly a—recording studio—*monitor* even though its relative neutrality preserved sufficient truthfulness that made it very easy to hear specific recording engineer decisions on different recordings.

These small French monitors also exhibited a superlative and effortless sense of *dynamics*, making music always feel energetically liquid and emotionally involving. In addition they were able to handle realistic levels without apparent compression or distortion. But this did not imply that the Atohm GT1 had to be played loud to come on song or achieve tonal fullness. This monitor was quite stunning at remaining tonally stable regardless of volume setting.

From my point of view, what this speaker has achieved is quite the tour de force. It is amazingly coherent and fantastic on three-dimensional imaging, linearity and tonal balance. The overall level of transparency and detail were very decent if not comparable to the most ambitious of monitors. Clearly the GT1 are not analytical loudspeakers. Their most salient feature is exceptional respect of phase and time. It's what makes them truly distinctive in the overcrowded bookshelf speaker market. That would seem a common virtue of two-way monitors but trust me, relative to its precise implementation of timing the Atohm GT1 occupies one of the tallest seats in this price range. This also implies excellent placement flexibility without sacrificing overall outcome and soundstage accuracy.

As on my previous JLA floorstanders, the rear switch to modify the response between 1500Hz and 30kHz in three 1.5dB steps from "soft" to "medium" to "bright" was in effect quite subtle but noticeable and a comfortable and flexible option. Again as with the JLA before, my preference ended up being the bypass or central position despite not having a perfect room.



The Atohm monitors delivered a much larger soundstage than their very compact size would have let on. It is thus truly possible to use the GT1 in a listening room up to 50 square meters without benefiting from any relevant room gain. The cherry on the cake resides in the ability to recreate the sound of many floorstanders at realistic scale without impacting accuracy. In the same way I was recently amazed by the open sound provided by the small B&W PM-1. The sensation of *opulence* was quite comparable between these two excellent compact monitors.

In comparison to my Triangle Duettos, the first obvious difference after size was weight. The Atohm GT1 turned out to be a very friendly creature that will do well in a limited space where its small size maintains sufficient separation to get a soundstage of acceptable width. Widely placed in an elongated rather than equilateral triangle they develop an impressively broad soundstage and at the same time avoid the characteristic bloat of bass-reflex loading.

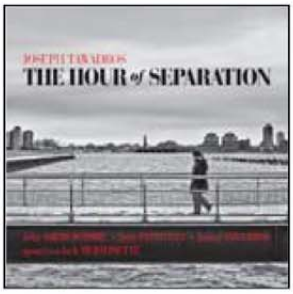
My quest for best in-room position was a rather easy task. This speaker does not seem to interact very much with the side walls. It maintains good focus with a precise soundstage albeit not one as deep as the more expensive Triangles will throw. Those Duettos also tend to deliver more air and detail. Their bandwidth seems more extended in the low end despite Triangle's specifications to the contrary. They tend to sound a bit brighter than the Atohms but both speakers are very strong on coherence and musicality. They are two designs—three if I consider the B&W—which I could easily live with. The GT1 sound is truly prodigious for a speaker with such a small footprint. It produces no particular waffling on bass notes and no apparent pseudo harmonics of cabinet talk. Here timbres are very decent and clear. Naturally this isn't the most transparent speaker extant but if you attempted to identify true rivals on size and price, I'd expect you'd meet some very real difficulties. I would highlight the *consistency* of this Atohm model which represents an interesting compromise between dynamic involvement and listening comfort, between punchy élan and laid-back personality.

Again, for its size the Atohm GT 1 had a very decently developed bass register. Even so the addition of the Rafale V38s subwoofer allowed it to obviously flourish. That hadn't proven the case with my Triangles whose exceptional down-low fortitude doesn't call for particular support (unless one perhaps invoked a true ultra-performance subwoofer). Except for a few organ recordings, the added value of a sub with the Magellans had always seemed spurious and the notion of spending more than the sticker for the monitors to simply cover more ground between 20 and 40Hz less than a bargain.

That said I'll admit that the added V38s released more bass *dynamics* even with the Duettos. Ultimately here I'd probably want *two* V38s in 'closed' mode to really make sense and obtain performance that then would probably exceed some quite expensive floorstanders at far lower cost. I did briefly have opportunity to experiment with two V38s units into their direct inputs preceded by the advanced bass management of the Trinnov ST2 HiFi. Those results were stunning. Led by such filtering brain power I can only imagine what one could achieve long-term with two V38s. With the Atohms' lighter innate bass balance the advantage of one Atohm sub in a 2.1 stereo setup over the low-level RCA inputs was far more obvious. After several trials I left the subwoofer position in closed mode with a 24dB/octave filter, the low-pass at nearly 60Hz, phase at 0° and the level at less than half the full range. The V38s operated very quietly and I never detected any pumping or chuffing port noise even at realistic levels. The subwoofer did need to be accurately placed and should not directly sit on the floor. Spikes or small feet are mandatory for hifi purposes. It's a pity Atohm does not include them.

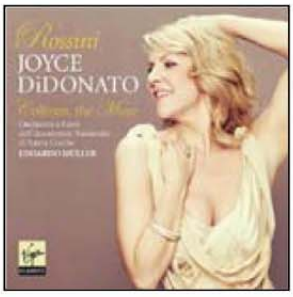
The V38s added more depth and three-dimensionality to the small monitors without substantially modifying their overall tonal balance. It thus affected neither the monitors' reproduction of piano or male vocals. It did however add *visceral impact* without getting excessive when connected to my preamplifier with its line-level inputs. Connecting the low-pass inputs directly to the second pair of unbalanced outputs of my Totaldac Reference A1 however, the V38s demonstrated its stunning fire power. The sonic result now was even more impressive but the level of monitors and sub had to be adjusted separately. The 2.1 Atohm's compact proposal now was incredibly *consistent* and an interesting option over medium-sized floorstanders. Bass felt highly accurate and clearly benefited the three-dimensionality of the soundstage.

Listening to *Hands* [Emarcy - B003MPB3EC] featuring Dave Holland on mandolin and flamenco guitarist Pepe Habichuela, the balance between both was quite perfect. Many systems with excessive brightness tend to give precedence to the guitarist. The GT1 supported by the Atohm subwoofer allocated equal distribution of space to both protagonists and Dave Holland no longer was just a sideman but fellow soloist. The dynamics felt quite enhanced but didn't inject any dryness or deterioration of timbres.

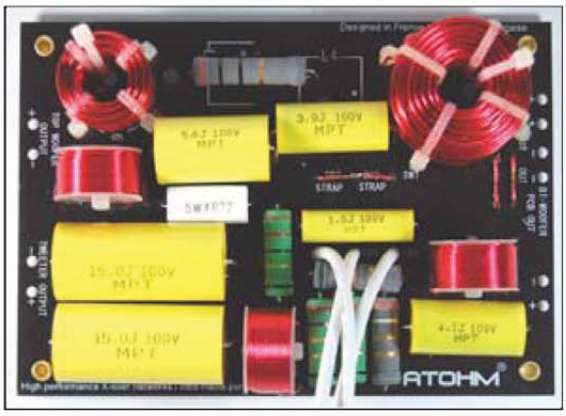


On the 7th album of oud player Joseph Tawadros *The Hour of Separation* [Enja - ENJ-9555 2], John Patitucci's double bass was thrown into deep relief and doubled to perfection the swirling lines of Tawadros' oud. The very good differentiation of tones achieved by the Atohm set highlighted the excellent combination of instruments and genres. The oud was simply sumptuous - simultaneously haunting and warm, elegant and earthy.

Bruckner's *8th Symphony* played by the Wiener Philharmoniker under Boulez [DG B00004TL2N] was equally convincing. Once again the Atohm sub brought further depth and weight to the overall result with an elegant and nuanced bottom end. The rhythmic performance of Boulez was well preserved by the monitors, which seemed to breath effortlessly even during the most intense passages. The soundstage had a high degree of accuracy and most instruments were clearly localizable. The demanding finale was portrayed at quite realistic levels without apparent compression or distortion.



On *Colbran the Muse* with Joyce DiDonato [Virgin Classics B002LMOCFY], the mezzo's gorgeous voice was impressive on tone modulation and body. Here her soprano is filled with subtle details, trills, runs and coloratura exploit that make this album a delightful experience. The precision of the singer's placement especially relative to depth, the perfect reproduction of the venue's natural echo and the very precise localization of the chorus in width and height were definitely outstanding features for such a small speaker.



Conclusion: A high point for the *Bizontain*! The GT1 is a not so frequent illustration of what can be achieved by serious engineering and design. Although technically advanced, the Atohm monitors don't portray any kind of high-end arrogance and can find their place in most standard living rooms in a large range of dimensions. These breezy speakers get you involved but never stress or tire the listener whilst preserving a very honest overall level of detail and genuine timbre accuracy. They make a definite difference over many competitors on phase and time coherence despite the apparent neglect of these aspects with the vertical baffle. Here they achieve stunning performance. If you are looking for overall clarity, phase precision and soundstage accuracy within maximum physical compactness, the Atohm GT 1 should be on your list. The Rafale V38s subwoofer is a very competitive and price-efficient contender which provides ideal bottom-end extension to the French monitors.

Joël Chevassus

Quality of packing: Good.
Reusability of packing: A few times.
Ease of unpacking/repacking: Reasonably easy.
Condition of component received: Flawless.
Human interactions: Very responsive and helpful.
Pricing: Excellent value for money.

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Atohm **website**