The Sonus Faber Cremona is the finest cabinet-built speaker I have heard for under $10,000/pair," wrote the usually reticent Sam Tellig in the January 2003 Stereophile. "Bravissimo...Molto, molto bene" he added to his paean of praise for the Italian speaker manufacturer's founder and chief engineer, Franco Serblin.

So I just had to take a listen for myself to this relatively inexpensive ($7495/pair), smaller descendant of the $22,000/pair Amati Homage, which had been Michael Fremer's reference at the end of the 1990s; and of the $10,000/pair Guarneri Homage, which had impressed Martin Colloms in the pages of this magazine a decade ago. An unfortunate backlog in my reviewing responsibilities meant that it took rather longer than I had expected to set the Cremonas up in my listening room. But, like everything worth experiencing, the wait was worth it.

We open in Venice...
...or rather, in the northern Italian city of Vicenza, where Sonus Faber's 24 employees toil in a spanking-new factory to produce loudspeakers that reflect that country's preoccupation with music and art. Like the Amati and Guarneri, the gorgeous-looking Cremona features a cabinet made of layers of maple, with curved sidewalls that give it a cross section something like that of a lute. This is intended not so much to eliminate vibrational modes as to control and tune them so that they have the minimum deleterious effect on the music. The front baffle is covered with black leather, and the grille consists of vertical black cords stretched with a small amount of tension from top to bottom of the baffle to ensure that any vibrations are well below the audioband. The strings are silk-covered silicone rubber and are considerably thinner than, for example, those comprising the grilles of the Krell LAT speakers.

The four drive-units are all sourced from VIFA's Scanspeak division. Covering the high frequencies is a custom-made version of the Danish manufacturer's popular ring-radiator tweeter. This has a copper cap on its pole-piece to reduce distortion. The doughnut-shaped fabric diaphragm, surrounding a brass "phase plug," is set back in a slightly flared front plate. Immediately beneath the tweeter is the midrange driver, this a 5.5" paper-coned unit with a "Symmetric Drive" motor. The paper cone is marked by cuts spiraling out from the dustcap to the rubber half-roll surround,
these filled with a polymer adhesive. This treatment is said to break up standing waves in the cone. The midrange driver is loaded with its own internal chamber and is vented via a port just over 1" in diameter on the black gloss rear section of the cabinet.

The twin 6" woofers also use Symmetric Drive and paper cones modified with the oblique, adhesive-filed cuts. The woofers handle the region below 300Hz and are reflex-loaded with a port nearly 3" in diameter, this again positioned on the cabinet rear. The crossover uses first-order filters, and there is a single pair of brass binding posts at the base of the cabinet's rear panel. Franco Serblin doesn't believe in biwiring or biamping. "It just introduces complications," he told Sam Tellig.

**We next play Cremona**

Sumiko's John Hunter was fortuitously visiting the Tri-State area soon after I had set up the Cremonas, so he visited to see what kind of job I'd done. I had toed both speakers in toward the listening seat. As he had done with Sam Tellig, John repeatedly played Jennifer Warnes' "Ballad of the Runaway Horse," from Rob Wasserman's *Duets* (CD, MCA MCAD-42131), while he made small adjustments in placement. The left speaker ended up pretty much where I'd set it up; the right speaker was moved closer to the side wall than I'd had it. The result was a smoother transition through the upper bass to the midbass, as heard on Wasserman's bass.

Hunter then made small adjustments to the rake-back angle of the front baffles by altering the relative heights of the Cremona's front and rear pairs of carpet-piercing spikes, which screw into the two metal crossbars on which each speaker sits. He appeared to be balancing the precision of soundstage focus against the overall smoothness of the mid-treble balance, as revealed by Warnes' rather sibilant voice.

After Hunter declared himself satisfied, he drove off to see his family in Connecticut and I did some more experimenting with position and baffle rake. Even so, I returned to his setup, which provided the best overall performance. Sumiko goes to considerable lengths to train its dealers and their sales staff in speaker-setup techniques; I didn't feel I was getting unusual treatment.
All my initial auditioning and John Hunter's adjustments were done using the **Musical Fidelity kW** monoblocks, which had sounded so magnificent with the **Revel Ultima Studios** I was listening to immediately prior to installing the Cremonas. However, the Sonus Fabers seemed more sensitive than normal to amplifier choice. The kWs exhibited the same iron control, sonic transparency, and impressive dynamics with the Cremonas, but the system balance tended a little toward the threadbare side of things.

Changing to my long-term reference, the **Mark Levinson No.33H** monoblocks, resulted in a sound that was less lean in the bass than with the kWs, with sweeter highs, though the balance occasionally sounded a little too warm. I ended my auditioning with the excellent dual-mono darTZeel NHB-108 from Switzerland, which John Marks wrote about in his September 2003 "**The Fifth Element**" column, as well as the Halcro dm38, which I'll be reviewing in a future issue. I'll save my comments on the Halcro for that review, but the darTZeel was a very pleasant surprise: quite the sweetest-sounding solid-state amplifier I have heard.

With all these amplifiers, the Cremonas produced an impressive sweep of sound that quite belied the modest lineup of four 6" woofers. The soundstage was expansive yet stable and well-defined, without any image bloat. The speaker's treble was its strong suit. Clean, airy, smooth, it made violins sound natural without doing so by suppressing high-frequency detail. The strings on Bruno Walter's traversal of Beethoven's first two symphonies (CD, CBS Masterworks MK 42009) sounded sweet, despite the 1959 recording's analog tape hiss being clearly audible. And oh, did the double-bass players on this CD dig into their entrances with gusto! In fact, the Cremona's bass performance, both in extension and in definition, was so good for a speaker in its price and size categories that I kept digging out recordings I hadn't played in a while to see what it could do with them.

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The Tri-Vista would not play DVD-As, however, which is where the Technics-Levinson combination drew ahead, particularly with one of those few discs where the content provider has allowed an in-the-clear 24-bit/96kHz digital output—Ray Brown's
classic *Soular Energy*, for example (Hi-Res Music HRM 211). Brown's bass had a superb combination of weight via the Cremonas, yet without any tendency to boom. As Brown walked his way through the bass line of "Cry Me a River," all his notes spoke evenly, with both a satisfying purr to, and excellent pitch differentiation of, the E-string fundamentals.

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Listening to the cabinet walls with a stethoscope while I played the half-step toneburst track from *Editor's Choice* (Stereophile STPH016-2), I could hear some distinct resonant modes between 200Hz and 600Hz; when I played pink noise, I could also hear an acoustic resonance at around 900Hz emanating from the midrange unit's port. Most of the time with most kinds of music, any coloration due to these narrow-band modes was below my threshold of detection, but they did pop into view with specific instruments on specific recordings. As with my speaker reviews last month, while preparing this report I was working on a recording of Mozart's Clarinet Concerto that I am hoping will be released on SACD and LP in the near future. I could definitely hear some of the clarinet's notes "hoot" a little, with a slight resonant overhang.

**I hear the mission bells a-calling**

That slight criticism aside, the Sonus Faber Cremona is a superb performer. It is also competitively priced, considering that its peers include the *Wilson Audio Sophia* ($11,700/pair), the *Revel Ultima Studio* ($11,000-$12,000/pair), and the *Quad ESL-989* (around $9000/pair). It is also one of the best-looking speakers I have had in my listening room. "Sweet, smooth, completely free from grain," wrote Sam Tellig. I must agree. Highly recommended.
Sidebar 2: Measurements

The Cremona was significantly more sensitive than average, at an estimated 91dB(B)/2.83V/m. It should therefore work well with moderately powered amplifiers. However, that amplifier must still be capable of delivering a goodly amount of current. Even though the Sonus Faber’s impedance magnitude remains reasonably uniform at higher frequencies, it drops to 2.8 ohms through the upper bass, with a cruel combination of 4.5 ohms and a -53 degrees electrical phase angle evident at 73Hz (fig.1).

![Stereophile Sonus Faber Cremona Impedance Mag (ohms) & Phase (deg) vs Freq (Hz)](image)

Fig.1 Sonus Faber Cremona, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)

The saddle at 30Hz in the magnitude trace indicates the tuning of the port that reflex-loads the twin woofers. However, both traces in this graph are also perturbed by discontinuities at around 120Hz and 900Hz, which might indicate the presence of problematic resonances. The solidly built cabinet was generally dead to a knuckle-rap test, but did seem a little lively in a few places. Investigating the cabinet’s vibrational behavior with a plastic-tape accelerometer, I found modes present at 387Hz, 477Hz, and 539Hz (fig.2). It’s possible that the presence of these panel resonances correlated with the trace of coloration I heard with the clarinet. What might be more possible is a strong resonance at 900Hz in the output of the upper port (not shown). This port doesn’t appear to do much of anything, but the resonance indicates that something is amiss at this frequency.
Fig.2 Sonus Faber Cremona, cumulative spectral-decay plot calculated from the output of an accelerometer fastened to the cabinet's side panel level with the lower woofer. (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz.)

The colored traces in fig.3 are the responses of the midrange unit (blue), woofers (red), and lower port (green), all measured in the nearfield and plotted with their levels in the ratio of the square root of the radiating areas. The midrange unit takes over from the woofers above 300Hz or so, with what appears to be 6dB/octave filter slopes. The woofers have the expected notch in their output at the reflex port tuning frequency of 30Hz. The port itself has a rather broader peak than the norm, and is significantly down in level. However, this behavior correlates rather nicely with the tight, unboomy character of the Cremona's low frequencies. What is less commendable, however, is the notch in the output of the woofers just above 100Hz, which coincides both with a peak in the port output in the same region and with one of the glitches in the impedance graph. There is obviously some sort of internal acoustic resonance present in this region.

Fig.3 Sonus Faber Cremona, anechoic response on tweeter axis at 50", averaged
across 30 degrees horizontal window and corrected for microphone response, with the complex sum of the nearfield midrange, woofer, and port responses, taking into account acoustic phase and distance from the nominal farfield point, plotted below 300Hz, along with the nearfield responses of the midrange unit (blue), woofer (red), and lower port (green).

Higher in frequency, the presence region is slightly depressed compared with the levels in the upper midrange and the top octave. However, it should be remembered that these measurements were taken on the tweeter axis, which is a highish 38.5" from the floor. With the tiltback provided by the spikes, the actual listening axis will be a little below the tweeter, which has a significant effect on the response. This is shown in fig.4, which shows the changes in response as the microphone moved above and below the tweeter axis. At extreme off-axis angles, a severe suckout develops just below 3kHz, which appears to be the crossover frequency between the tweeter and midrange unit. But there is more presence-region energy 5 degrees below the tweeter axis. The intended tiltback of the speaker does more to even up the perceived treble balance than it does to confer true time alignment.

Fig.4 Sonus Faber Cremona, vertical response family at 50", normalized to response on tweeter axis, from back to front: differences in response 15 degrees-5 degrees above axis, reference response, differences in response 5 degrees-15 degrees below axis.

The lateral dispersion (fig.5) is wide and uniform through the mid-treble, correlating with the stable, well-defined stereo imaging I noted in my auditioning. However, the speaker's output drops rapidly to the sides above 8kHz, which will work against the slight on-axis peak in this same region. In a large room, the Cremona's sound will lack top-octave "air," while in a small, lively room, the flare in the radiation pattern in the bottom octave of the tweeter's passband might make the speaker sound a little bright. In my own room, with the Sonus Fabers in the positions arrived at by Sumiko's John Hunter, the frequency balance throughout the treble is impressively
even (fig.6). The lower-midrange and midbass regions are a little suppressed, but this was the tradeoff Hunter had arrived at in getting the best balance between upper-bass bloom and low-bass extension. And in-room, with the expected low-frequency boundary reinforcement, the Cremonas' bass extends down to the 25Hz 1/3-octave band.

Fig.5 Sonus Faber Cremona, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90 degrees-5 degrees off-axis, reference response, differences in response 5 degrees-90 degrees off-axis.

Fig.6 Sonus Faber Cremona, spatially averaged, 1/3-octave response in JA's listening room.

Fig.7 shows the effect of the "vertical string" grille on the Cremona's quasi-anechoic response. A regular series of peaks and dips can be seen, which will have a small effect on the speaker's balance, but these are surprisingly small in amplitude compared with the gross effect introduced by the similar-looking grille of the Krell LAT-1 (see fig.4 in my measurements accompanying Larry Greenhill's review in
In the time domain, the Cremona's step response (fig.8) indicates that, even with its first-order crossover, the speaker is not time-coincident. The tweeter's sound arrives first at the ear, and is connected in inverted acoustic polarity, followed then by the correct-polarity midrange unit, then the inverted woofers. However, the step response of each drive-unit smoothly hands over to the next lower in frequency. This indicates good frequency-domain integration, suggesting that this is the meaning of Sonus Faber's statement that the crossover is "optimized for acoustic phase response." Note that on the tweeter axis, which is where this step response was taken, the tweeter's output is very slightly ahead of where it needs to be for the best integration of its step with that of the midrange unit. Tilting the speaker back slightly, as recommended by Sonus Faber, will bring the tweeter's output into the correct alignment.
Fig. 8 Sonus Faber Cremona, step response on tweeter axis at 50” (5ms time window, 30kHz bandwidth).

Finally, the Cremona's farfield waterfall plot on the tweeter axis (fig. 9) is clean throughout the treble. However, there is some delayed energy in the 1kHz region, which I imagine correlates with the internal acoustic mode mentioned above. All things considered, this is excellent measured performance that suggests a careful balancing of factors on the part of the Cremona's designer. —John Atkinson

Fig. 9 Sonus Faber Cremona, cumulative spectral-decay plot at 50” (0.15ms risetime).

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