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# Focal

## Chorus 807V

### LOUDSPEAKER

Robert J. Reina

**R**eaders often ask how I choose components for review. My method is simple: Ninety percent of what I review is gear that has impressed me at one of our Home Entertainment Shows, or new designs from manufacturers whose products I've liked in the past. The remainder are assigned by John Atkinson.

This time I tried something different. I contacted three audio retailers whom I trust for their hearing acuity, passion for music, and honesty, and asked each this question: "Which affordable speaker have you heard lately that impressed you?" (My working definition of *affordable loudspeaker* currently has a ceiling of \$1500/pair.) To my surprise, all three had the same answer: a model from Focal's Chorus 800V series.

#### Designing

The Chorus 800V series is the second from the bottom of the four families of speakers Focal designs for two-channel home audio. (The Utopia Be line is their flagship series, and the Chorus 700V speakers comprise their entry-level line.) The 800V series includes two bookshelf and three floorstanding models that range from \$795 to \$2995/pair, as well as several home-theater models. I chose the larger of the bookshelf designs, the 807V (\$995/pair).

The Chorus 807V is a front-ported, two-way speaker with a 1" TNV aluminum-magnesium inverted-dome tweeter and a 7" Polyglass-cone woofer. Focal America's Daniel Jacques explained to me that the tweeter voice-coil is attached midway along the dome rather than on the periphery, as in most tweeters. He claimed that this improves the driver's pistonic movement, to give greater speed and better control. Jacques also claimed that Focal doesn't believe in ferrofluid cooling: "How fast can you walk when you are in a pool?"

The 807V looks stunning. Focal employed the Parisian design house of Pineau & Le Porcher to develop the attractive "V" look, which combines polished, acrylic-covered ebony with a highly figured finish of moka wood. I set the speakers on my trusty, 24"-high Celestion Si stands, which were loaded with sand and lead shot. I noticed no difference in their performance with their grilles on or off, so I left them on—the V-shaped grille is a key part of the speaker's appearance. The Chorus 807V is not magnetically shielded.

#### Listening

I was immediately struck, with every recording I tried, by the natural, detailed, organic, and holographic midrange of the Chorus 807V. All vocal recordings were stunning. I mined my collection for the best-sounding vocals, which meant hitting the vinyl stacks as well. The title track of Doris Day's *Cutting Capers* (LP, Columbia C 11232) reveals her voice in its 1950s prime, in all its golden, silky, breathy glory—as if she's bathed in light against a backdrop of delicate, natural orchestral textures. I'm also a fan of the early Joan Baez; her rendition of Bob Dylan's "It Ain't Me Babe," from *Joan Baez 5* (LP, Vanguard VSD 79160), with that seductive, birdlike vibrato in her high register, was arresting through the 807V. The speaker's capabilities of subtle, low-level dynamic articulation almost let me hear Baez's head and throat as two distinct point sources.

The most captivating aspect of the Chorus 807V was its high-frequency performance. Its resolution of detail, speed, and extension of the highs told me that this speaker

**DESCRIPTION** Two-way, bass-reflex, stand-mounted loudspeaker. Drive-units: 1" (25mm) TNV aluminum-magnesium inverted-dome tweeter, 7" (180mm) Polyglass-cone woofer. Crossover frequency: 3kHz. Frequency response: 50Hz–28kHz,  $\pm 3$ dB. Low-frequency point: 41Hz. Sensitivity: 92dB (2.83V/m). Impedance: 8 ohms nominal, 4.2 ohms minimum. Recommended amplification: 25–175W.

**DIMENSIONS** 17.5" (448mm) H by 9.2" (237mm) W by 13" (333mm) D. Weight: 22.2 lbs (10.1kg).

**FINISH** Ebony-Moka.

**SERIAL NUMBERS OF UNITS**

**REVIEWED** 10A003579/80.

**PRICE** \$995/pair. Approximate number of dealers: 161.

**MANUFACTURER** Focal-JMLab, BP 374-108, rue de l'Avenir, 42353 La Talaudière cedex, France.

Tel: (33) 04-77-43-57-00.

Fax: (33) 04-77-37-65-87.

Web: [www.focal-fr.com](http://www.focal-fr.com).

US distributor: Audio Plus Services, 156 Lawrence Paquette Industrial Drive, Champlain, NY 12919.

Tel: (800) 663-9352.

Fax: (866) 656-0686. Web:

[www.audioplusservices.com](http://www.audioplusservices.com).







has one remarkable tweeter. When I played Tiger Okoshi's *Two Sides to Everything* (CD, JVC JVCXR-0004-2), his trumpet's blatty bite had the attack, spit, and golden glow of a live trumpeter in my living room. Nor was his a sweet-sounding horn; on every track it was in my face, dominating the mix, exactly as it would had Okoshi been standing there in my living room.

Derek Bailey uses unorthodox picking and plucking techniques on both acoustic and electric guitar to create the remarkable improvisations on his *Solo Guitar Vol. 1* (CD, Incus CD10). To hear Bailey's unique dynamic phrasings properly, it's essential that a speaker's tweeter be able to unravel every subtle nuance of his playing. I listened to the entire CD through the 807Vs and was reminded of a time in the 1980s when I sat 10' from Bailey at a live performance.

On certain recordings, however, the extreme high frequencies seemed a bit emphasized. The sibilants of all closely miked female vocalists on familiar recordings—such as “Hey, Sweet Man,” from Madeline Peyroux's *Dreamland* (CD, Atlantic 82946-2)—seemed a bit more prominent than I remembered hearing them through other speakers. The Focal's tweeter was also very revealing of less than pure high-frequency content. In the title track of Hole's *Celebrity Skin* (CD, Geffen DGCD-25164), the high frequencies are a bit hashy and trashy. With most speakers I've tried, this has not deterred me from cranking up this tune to live rock-concert levels and dancing around the room. But the Chorus 807V so laid bare the recording's distorted, compressed highs that I ended up uninterested in hearing the rest of the disc.

The Chorus 807V's bass was extended and forceful for a “bookshelf” speaker. With all recordings the bass was fairly clean, tight, and uncolored, though I found the lower range of electric bass guitars (eg. Chad Watson's on Janis Ian's *Breaking Silence* CD, Analogue Productions CAPP 027) and string basses (eg. Ray Brown's solo on “I'm an Old Cowhand,” from the CD of Sonny Rollins' *Way Out West*, JVC VICJ 60088) to be a touch warm and supple, while still sounding natural. This wasn't, however, noticeable with electronic rock recordings; the synth bass and drum machine on Sade's *Love Deluxe* (CD, Epic EK 53178) were clean, tight, and powerful. Moreover, the 807V's superb resolution of detail made it simple to pick out



Focal Chorus 807V

all the electronic processing effects on this recording.

Playing recordings of bombastic orchestral works, I was very impressed with the Chorus 807V's lower bass range. From the timpani passage in the first movement of David Chesky's *Violin Concerto*, from his *Area 31* collection (SACD/CD, Chesky SACD 288), to the bass drum in the finale of Stravinsky's *The Firebird* in the recording by Antal Dorati and the London Symphony (CD, Mercury Living Presence SR90226), I felt I was listening to larger, more dynamic floorstanders. I had the same reaction to the opening tracks of Kraftwerk's *Minimum/Maximum* (CD, EMI ASW 60611)—when cranked to rock-concert levels, they shook the room

without compression, distortion, or strain.

But to really appreciate this ruthlessly revealing speaker, I had to trot out the highest-quality recordings I had. Then I was rewarded with staggering realism for the price. Timothy Seelig and the Turtle Creek Chorale's recording of John Rutter's *Requiem* (CD, Reference RR-57CD) bloomed with richly layered vocals, and a sense of ease and naturalness around the organ. The pedal notes were natural-sounding and seemed quite extended (how low do these puppies go, JA?), but never seemed overpowering or in my face.

I've played Kohjiba's *Transmigration of the Soul*, from the Santa Fe Chamber Music Festival's *Festival* (CD, Stereophile STPH007-2), many times, but with the Chorus 807V I was struck by the upper partials of Carol Wincenc's flute—I had never before heard this recording with so much air. Cellist Peter Wyrick's bowed attacks had much more power, finesse, and articulation than I'd noticed before, and Tyler Mack's timpani reverberated off the surfaces of the St. Francis Auditorium before naturally decaying. However, the loudest *thwacks* in the marimba's upper register were more prominent than I'd remembered.

I've spent a long time listening to *Live at Merkin Hall*, John Atkinson's recording of my jazz quartet, Attention Screen (CD, Stereophile STPH018-2). However, the Chorus 807V was the first speaker to let me completely warm up to this recording and analyze our performance—it sounded as if I'd been transported back to the Merkin's stage. The mid-1990s Steinway D piano I played that day was as good as any instrument I've ever played (so much for the theory that new Steinways aren't as good as older ones), but only with the Focal did the opening piano passage of “Mansour's Gift” sound exactly as that piano had sounded that day in

## ASSOCIATED EQUIPMENT

**ANALOG SOURCES** VPI TNT IV turntable, Immedia RPM tonearm, Koetsu Urushi cartridge; Rega Planar 3 turntable, Syrnix PU-3 tonearm, Clearaudio Virtuoso Wood & Aurum Beta S cartridges.

**DIGITAL SOURCES** Lector CDP-7T, California Audio Labs Icon Mk.II Power Boss, Creek Destiny & CD53 Mk.II CD players; Pioneer DV-333 DVD player.

**PREAMPLIFICATION** Vendetta Research SCP-2D phono stage, Audio Valve Eclipse and Audio Research Reference 3 line stages.

**POWER AMPLIFIER** Audio Research VT100 Mk.II and Reference 110.

**INTEGRATED AMPLIFIERS** Creek Destiny & 5350SE.

**LOUDSPEAKERS** Amphion Helium<sup>2</sup>, Monitor Audio Silver RS6, Nola Mini.

**CABLES** Interconnect: MIT Magnum M3, MIT MI-350 CVTwin Terminator, MIT MI-330SG. Speaker: Acarian Systems Black Orpheus.

—Robert J. Reina



February. The more I play with drummer Mark Flynn, the more I am in awe of his technique, passion, versatility, and economy. Listening to the simple funk backbeat he lays down at the beginning of "Blizzard Limbs," I found myself staring at the dynamic articulation of his simple, wet-sounding bass-drum foundation and his carefully placed snare shots. Through the Chorus 807V, his cymbals sounded as natural as when I've heard him live.

### Comparing

I compared the Focal Chorus 807V (\$995) with the Nola Mini (\$695 when available), the Amphion Helium<sup>2</sup> (\$1000), and the Monitor Audio Silver RS6 (\$1000). (All speaker prices are per pair.)

The midrange performances of all four speakers were in the same league with respect to lack of coloration, resolution of detail, and organic low-level

dynamic articulation. The main differences among these speakers lay in their high-frequency presentation, bass extension, and high-level dynamic performance. The Nola Mini had considerable high-frequency detail but was not as extended as the Chorus 807V and seemed a bit more relaxed in that region. The Nola's bass extension was comparable to the Focal's, but the latter had superior high-level dynamic slam.

## MEASUREMENTS

I measured the Focal Chorus 807V with its grille removed. Its voltage sensitivity on the tweeter axis was significantly higher than the average I have measured over the years, at an estimated 90dB(B)/2.83V/m, though this is a little lower than the 92dB specified. Though its impedance drops to 4.1 ohms at the bottom of the midrange, and there is a combination of 5.8 ohms magnitude and  $-40^\circ$  electrical phase angle at 120Hz (fig.1), overall the speaker is a fairly gentle load for the partnering amplifier to drive.

The small wrinkles between 20kHz and 30kHz in the impedance traces are due to the tweeter's primary dome resonances; because they lie above the normal range of human hearing, these resonances will be benign. Of more concern is the sharp discontinuity just above 800Hz in the traces, which indicates the presence of some sort of cabinet

resonance in that region. The cabinet is tapered toward the speaker's rear to minimize acoustic resonances. Nevertheless, investigating the cabinet walls' vibrational behavior with a simple accelerometer, I did find a major resonant mode at 836Hz on all surfaces. Fig.2 is a cumulative spectral-decay plot showing the behavior of the top panel; some other lower-level modes can also be seen. Predicting the subjective effect of this behavior is not easy, and as Bob Reina noted nothing untoward going on in the upper midrange, I assume this cabinet resonance looks worse than it sounds.

Nevertheless, a small peak can be seen between 800 and 900Hz in the reflex port's nearfield response (fig.3, red trace), as well as one a little lower in frequency. Other than those, however, the port is well-behaved, its bandpass response peaking between 35 and 85Hz. The woofer's minimum-motion frequency is 45Hz (fig.3, blue trace), the same as the low-frequency saddle in the impedance-magnitude trace. Both the woofer's output and the sum of the woofer's and port's outputs (black trace, taking into account acoustic phase) peak higher in the upper bass than is to be expected from the effect of the nearfield measurement technique. I suspect that Focal's design team has chosen a rather underdamped woofer tuning to balance the rise in high-frequency output that can also be seen in this graph, in the two octaves below the response peak due to the tweeter's ultrasonic resonance. Bob did note that "the Chorus 807V's bass was extended and forceful for a 'bookshelf' speaker," which is what I would expect from this measured behavior.

Though the Chorus 807V's midrange is impressively flat, the region covered by the tweeter can be seen to be

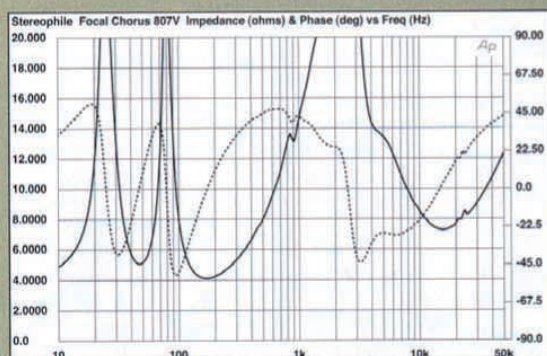


Fig.1 Focal Chorus 807V, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)

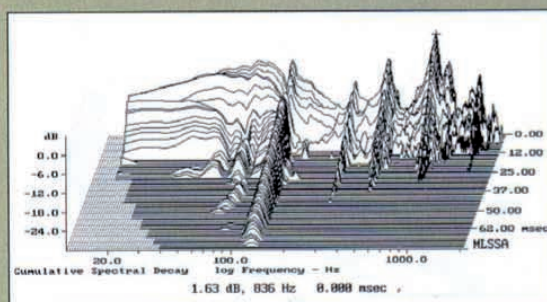


Fig.2 Focal Chorus 807V, cumulative spectral-decay plot calculated from the output of an accelerometer fastened to the center of the cabinet's top panel (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz).

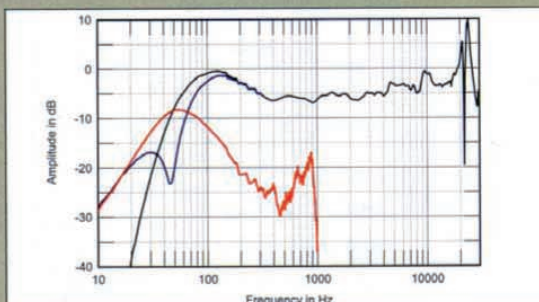


Fig.3 Focal Chorus 807V, anechoic response on tweeter axis at  $50^\circ$ , averaged across  $30^\circ$  horizontal window and corrected for microphone response, with the nearfield responses of the port (red) and woofer (blue) plotted below 1kHz and 300Hz, respectively, and the complex sum of the nearfield responses plotted below 300Hz.



The Amphion Helium<sup>2</sup> also had quite extended highs that were pure and detailed, but its extreme top seemed a bit softer and more pillowy, a characteristic I find appealing with all recordings. The Helium<sup>2</sup>'s low-frequency extension and high-level dynamics weren't even close to the Chorus 807V's, however.

Finally, the Monitor Silver RS6's highs seemed almost as extended as the Focal's, but the RS6 was a bit more forgiving at the extreme top end. The

floor-standing Monitor's bass extension and high-level dynamic performance, however, were by far the strongest of the group.

### Concluding

The Focal Chorus 807V is an attractive, and revealing loudspeaker of very low coloration and high versatility that gave me hours of enjoyment with a wide range of program material. I also feel that, at \$995/pair, it is a superb value

for the money. However, its tweeter is so extended in range and consequently so revealing that careful matching with other components and recordings is warranted. With the finest associated gear and recordings, the Chorus 807V achieved a level of performance that competed with much more expensive speakers. I commend Focal for trickling down the technology of their more expensive wares to such an affordable realm.

### measurements, continued

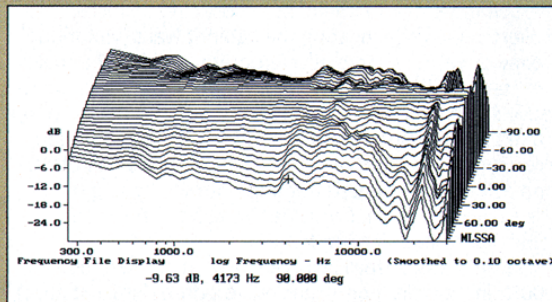


Fig.4 Focal Chorus 807V, lateral response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

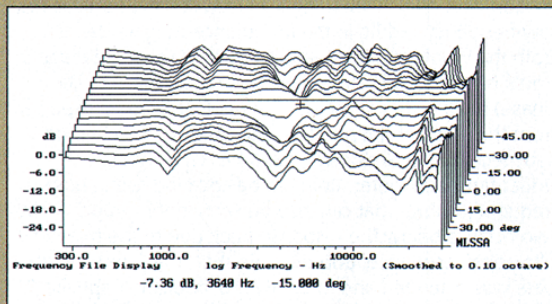


Fig.5 Focal Chorus 807V, vertical response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 45-5° above axis, reference response, differences in response 5-45° below axis.

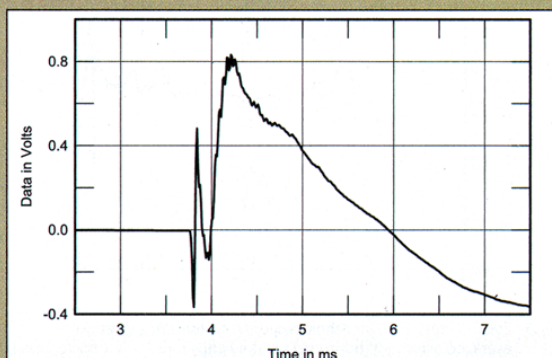


Fig.6 Focal Chorus 807V, step response on tweeter axis at 50° (5ms time window, 30kHz bandwidth).

shelved up by a couple of dB. All things being equal, this will lead precisely to what BJR described in his auditioning notes: "the extreme high frequencies seemed a bit emphasized. The sibilants of all closely miked female vocalists on familiar recordings . . . seemed a bit more prominent than I remembered hearing them through other speakers."

The Focal's plot of lateral dispersion (fig.4) is wide and even, though with a touch of flare at the bottom of the tweeter's passband, which will contribute to the speaker's sounding "revealing." The response above 10kHz doesn't fall off as quickly to the speaker's sides as is usually seen with a 1" dome; perhaps this is due to the drive-unit's being mounted at the top of the baffle, above the V-shaped grille. In the vertical plane (fig.5), suckouts develop in the crossover region more than 5° above or below the tweeter axis, suggesting that the Focal's owner choose stands that place his ears reasonably close to the height of the tweeters.

Turning to the time domain, the Chorus 807V's step response (fig.6) is a little unusual: the tweeter's output arrives at the microphone well ahead of the woofer's. However, because the tweeter is connected in inverted acoustic polarity, the decay of its step smoothly integrates with the positive-going start of the woofer's step, this correlating with the good frequency-domain integration seen in fig.3. The Focal's cumulative spectral-decay plot (fig.7) is superbly clean for a speaker costing just \$1000/pair.

The Focal Chorus 807V offers excellent measured performance, though its treble balance will require care in choosing source and amplification components if it is not to sound *too* revealing.

—John Atkinson

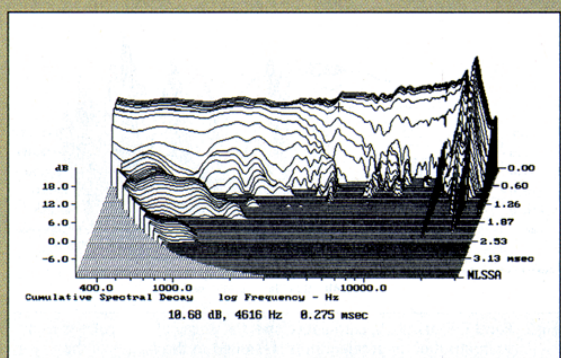


Fig.7 Focal Chorus 807V, cumulative spectral-decay plot at 50° (0.15ms risetime).