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EQUIPMENT REPORT

LARRY GREENHILL

JL Audio Fathom f212v2 & CR-1

POWERED SUBWOOFER & CROSSOVER

It was all so familiar. In “Music in the Round” in the January 2016 issue, Kal Rubinson praised JL Audio’s latest subwoofer, the Fathom f113v2.¹ He raved about its amplifier’s higher power over the original f113, its beefier 13” woofer, its improved, 18-band Digital Automatic Room Optimization (DARO), and its significantly improved deep-bass response in-room.

It was familiar because the same thing had happened when Kal reviewed the original Fathom f113 in his May 2007 column.² As he would again nine years later, he’d extolled the sub’s high power, small size, built-in single-band Automatic Room Optimization (ARO) software, and “remarkably powerful and clean” deep bass. Those were also my reactions to the Fathom f113.

One thing led to another: I reviewed the Fathom f113 in the September 2007 issue,³ and the larger Fathom f212 in the April 2010 issue,⁴ both in pairs. The two Fathoms impressed me with their bass extension, powerful impact, dynamic range, and ability to significantly increase the depth and width of the soundstage.

Which was why, after reading Kal’s January 2016 column, I called Carl Kennedy, JL’s VP of sales. I had to hear a Fathom f113v2 in my own system. Kennedy must have been expecting my call. “No,” he said, “Kal has already done the Fathom f113v2s; I’d rather you reviewed a pair of Fathom f212v2s.”

Be careful what you wish for: heavier Fathoms

Within a month, JL Audio had shipped me two Fathom f212v2s and their new CR-1 outboard crossover—total weight over 512 lbs—secured with thick metal straps to a large wooden pallet. No tool in my house could dent those straps, so I picked up a set of 18-gauge Wise W2 aviation snips at Home Depot. Their steel blades cut the thick metal straps as if they were butter. I carefully nudged the shipping cartons off the pallet and onto the garage floor.



The f212v2s increased the Revels’ bass power, dynamics, and pitch definition.

That was the easy part. Try as I might, I couldn’t move either 256-lb speaker carton anywhere: the f212v2s stayed put as if welded to the floor. Several phone calls later, two young, muscular handymen arrived, schlepped the huge cartons upstairs, and unpacked them in my listening room. I slipped the four supplied Waxman Super Sliders under each sub to protect my wood floors, then slid them into the room’s front corners—the sweet spots where the two review samples of the first version of the Fathom f212 had sat.

What’s new

Looking at the Fathom f212s, I was hard-pressed to see any differences between v1 and v2 that might justify the

1 See www.stereophile.com/content/music-round-76-page-2.

2 See www.stereophile.com/musicintheround/507mitr/index.html.

3 See www.stereophile.com/subwoofers/907jl/index.html.

4 See www.stereophile.com/subwoofers/jl_audio_fathom_f212_powered_subwoofer/index.html.

\$1000 increase in price, to \$7000. The changes are within. The v1's single-band ARO equalizer has been replaced with JLA's 18-band DARO, which covers the range from 20 to 150Hz. Kal Rubinson described DARO performing "cut-only correction, with automatic output level realignment post-EQ. Each band is adjusted independently by the DSP. In addition, microphone gain and output levels are adjusted automatically, without user effort, which results in greater ease of use and, more important, more accurate and consistent results."

Audio line-level signals are now directed to circuit boards inside a cast-aluminum housing attached to the inside of the f212's rear panel—they're never routed to the control panel directly. The f212v2's class-D internal amplifier is 20% more powerful (3600W short-term) than the v1's, which required JLA engineers to thicken the roll surrounds of the woofers to maintain their linearity and low distortion.

The Fathom f212v2's build quality doesn't disappoint. It's a massive, super-solid sub with a lustrous, High Gloss Black finish, equipped with high-quality Neutrik balanced connectors. All mechanical controls are of the set-and-forget type, and feel smooth and solid to the touch. The fit'n'finish are outstanding—this sub should last a lifetime.

CR-1 outboard crossover

Most aftermarket subwoofers depend on the high-pass 80Hz crossover filter built into A/V processors. But audiophile-quality two-channel preamplifiers don't include crossover filters for the same reason they don't have tone controls. Thus, for those with music-only systems, an outboard crossover becomes a necessity for the optimal integration of a subwoofer—it's not an optional accessory.

The \$3000 CR-1 meets this need. Its continuously variable high- and low-pass filters (30–150Hz) use 1% precision



JFET-input op-amps, and polypropylene film and foil capacitors to "optimize the audio system's spatial and spectral performance." The low- and high-pass circuits are built around two banks of precision Linkwitz-Riley filters that can be set for 12 or 24dB/octave via a front-panel switch. Differential input technology is used to reject common-mode hum and noise on the unbalanced inputs, and independent buffering of the balanced and unbalanced outputs reduces the likelihood of noise. The rear panel offers both balanced (XLR) and unbalanced (RCA) connectors.

SPECIFICATIONS

FATHOM F212V2 POWERED, SEALED-BOX SUBWOOFER.

Drive-units: two 12-W7 12" diameter voice-coil and 3" peak-peak excursion. Effective piston area: 168 in³. Magnet weight: not specified. Low-pass filter: variable, 30-130Hz, 12 or 24dB/octave. High-pass filter: not supplied. Inputs: stereo or mono balanced (single XLR connector), stereo or mono unbalanced (single RCA connector). Input modes: Master, Slave. Outputs: single balanced (XLR) to additional subwoofer. Input impedance: 50k ohms (RCA), 10k ohms (XLR). Input sensitivity: 166V for 105dB SPL. Front-panel controls: Power (On/Off/Automatic Signal Sensing); Digital Automatic Room Optimization (Demo/Defeat/Calibrate, with supplied calibration microphone); Level (Reference, Variable); Master Level (variable, full mute to

+15dB over reference); lights (on/off/dim); Low-Pass filter (-12dB/-24dB/Off); Extreme Low Frequency (ELF) Trim (variable, -12dB to +3dB at 25Hz); Polarity (0°/180°); Phase (variable, 0-280°, at 80Hz). Amplifier: switching, class-D, 3600W RMS short-term. Frequency response (anechoic): 20-97Hz, ±1.5dB; 19-110Hz, ±3dB; 15-157Hz, ±10dB. Distortion: <6.5% THD at 50Hz, 124dB output at 1m, 0.15V RMS input, Level control set to maximum.

Accessories included: detachable AC power cable; well-written, well-illustrated 70-page user's manual in English and Spanish on thick, glossy paper; pair of white gloves; sliders to place under speaker.

Dimensions 31.96" (812mm) H by 14.92" (379mm) W by 20.39" (518mm) D. Effective cabinet volume: 574 in³ (9.4 liters). Weight: 224 lbs (102kg).

Finishes High Gloss Black.

Serial numbers of units reviewed 000125HB, 000115HB.

Price \$7000.

CR-1 CROSSOVER STAND-ALONE ELECTRONIC CROSSOVER. Frequency range: 30-150Hz, variable; independent high- and low-pass filter frequency controls on front panel. Crossover slopes: 12 or 24dB/octave, Linkwitz-Riley, selectable via front-panel switch. Subwoofer/satellite balance control: ±12dB, fully variable via front-panel knob. Filter Damping controls: Q:0.3-1.4 at 12dB/octave; Q:0.16-4.0 at 24dB/octave; for either slope, Q=0.5 at top dead center "0" mark. Maximum input voltage: 8V RMS (+18dBV). Input impedance: 50k ohms (RCA), 300 ohms (XLR). Maximum output voltage: 8V RMS. Output impedance: 150k ohms unbalanced, 300 ohms balanced. THD+noise:

<0.002% at 8V RMS/10k ohms, 20Hz-20kHz, 90kHz bandwidth. Signal/noise: >115dB, ref. rated output voltage. Low-pass frequency response: +0/-1dB, 5Hz to 1/4 of filter frequency. High-pass frequency response: +0/-1dB from 4x filter frequency to 80kHz. Power consumption: 30W typical, with or without signal.

Dimensions 17.4" (441mm) W by 3.8" (97mm) H by 15.67" (398mm) D. Weight: 22 lbs (10kg).

Finish Brushed aluminum.

Serial number of unit reviewed 960011000156.

Price \$3000.

BOTH

Approximate number of dealers: 200. Warranty: 2 years, parts & labor, nontransferable.

Manufacturer JL Audio, 10369 N. Commerce Parkway, Miramar, FL 33025-3921. Tel: (954) 443-1100. Fax: (954) 443-1111. Web: www.jludio.com.

The CR-1's front-panel controls are a pleasure to use. Bypass switches are prominently featured. According to Brett Hanes, JLA's lead engineer for home products, "you can listen to the satellites in full-range (no filters applied and no subs) by hitting the CR-1's Bypass button (its LED goes from green to red). Dealers use this one-button 'bypass demo' on the CR-1 as a teaching tool to easily show potential customers what a difference a subwoofer can make in their stereo system." Indeed, being able to switch quickly, without having to detach and reinsert interconnects, helped me by speeding setup time between comparisons—important because auditory memory is so short. Four Output Muting pushbuttons on the right of the CR-1's front panel can individually shut off each of two main speakers and each of two subs (if a button's LED glows red, that speaker is not playing).

Setup

I set up each Fathom f212v2 without its protective grille, and with its front baffle 2.5' behind the front baffle of the corresponding Revel Ultima Salon2—a full-range, dynamic, floorstanding speaker.⁵ The inner edges of the Salon2s' baffles were 8' apart, their outer edges 3' from the sidewalls, and the centers of their baffles 7' from my ears when I was seated. Both subs' woofers were 9.5' from my listening chair.

With the exception of the CR-1 crossover, I used the same system connections I had for my review of the original Fathom f212 in 2010. I ran balanced interconnects from my Bryston BP-26 preamplifier's outputs to the CR-1's inputs. Another pair of balanced interconnects linked the CR-1's low-pass outputs to each f212v2's left-channel input jack, with each subwoofer's rear-panel switch set to Master. More balanced interconnects linked the CR-1's high-pass outputs to the inputs of my Mark Levinson No.334 power amp, which was connected to each Ultima Salon2 with Pure Silver R50 biwire double-ribbon speaker cables.

Measurements

For this review, I used Studio Six's iTestMic—a cost-effective, professional-grade test and measurement microphone that plugs into my iPhone 6⁶—plus Studio Six's Audio Tools app to run fast Fourier transform (FFT) frequency-response measurements from 8Hz to 2kHz. I placed the iTestMic-iPhone 6 combo on the back of my listening chair at ear level: 37" above the floor. For a test signal, I used a digital file of uncorrelated pink noise, played through my Bryston BDP-2 media player.

I first put the CR-1 on full Bypass, to run FFT measurements on the Salon2s full-range, without crossover filters or subwoofers. This generated a flat room-response curve: $\pm 3\text{dB}$, 8Hz–2kHz (fig.1). To run the Fathom f212v2s solo and full-range without crossover, I plugged the Bryston preamp's balanced interconnects into the CR-1's Bass Management inputs, and depressed the Defeat button on each sub's control panel to bypass its internal settings. The resulting FFT showed an irregular room response: $\pm 6\text{dB}$, 18–125Hz, with a peak at 45Hz and a bigger null at 60Hz (fig.2).

I then returned the preamp's balanced interconnects to the CR-1's main stereo inputs, to once again access low- and high-pass filtering. I set the filters' 6dB corner frequencies to 80Hz, 24dB/octave. Playing the same digital file of uncorrelated pink noise, I set each sub's Master Level control to match its acoustic output to the Salon2's output by ear, and confirmed this setting using Audio Tool's RTA display. I ran separate FFT measurements of the room response of the high-pass-filtered Salon2s with subs muted (fig.3), to confirm the 24dB/octave rolloff of the CR-1's high-pass filter. Reversing the sub's signal polarity or turning on its Extreme Low Frequency (ELF) filter worsened the sound, so I left those in their default settings.

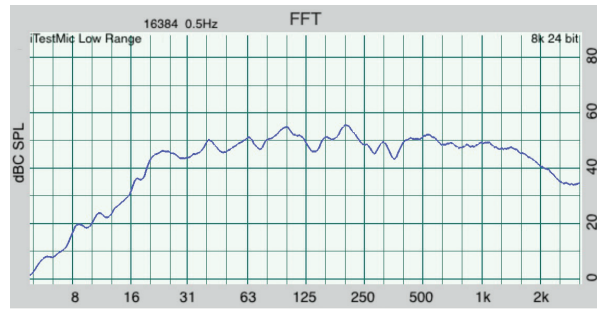


Fig.1 Revel Ultima Salon2s, uncorrelated pink noise before DARO, FFT display, 8Hz–2kHz, no filters, subs off, full-range in-room response (80dB vertical range).

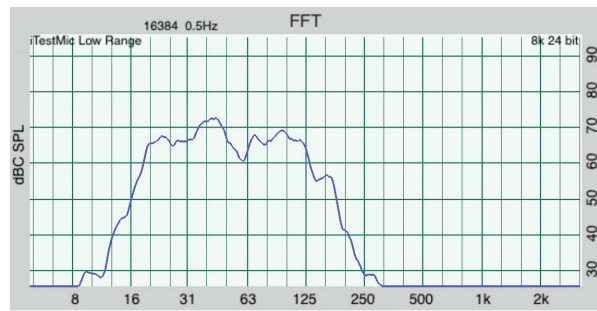


Fig.2 JL Audio Fathom f212v2s, uncorrelated pink noise before DARO, FFT display, 8Hz–2kHz, no low-pass filter, Salon2s off, full-range in-room response (80dB vertical range). Note 45Hz peak and 60Hz dip.

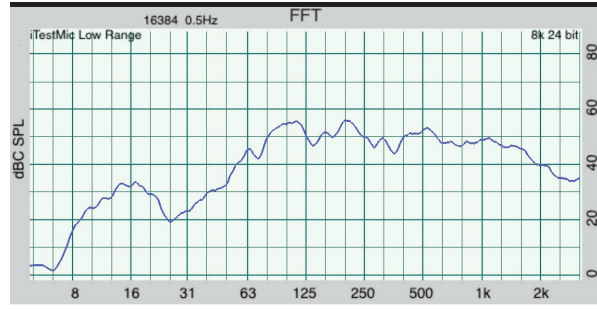


Fig.3 Revel Ultima Salon2s, uncorrelated pink noise before DARO, FFT display, 8Hz–2kHz, high-pass filter on, subs off, in-room response (80dB vertical range).

Last, I time-aligned the subs with the main speakers using the phase control on each Fathom's control panel. Barry Ober, JLA's home products senior tech support engineer, recommended that I use the 80Hz tone on Sounddoctor's *Test/Setup CD Version 2.7.2* (www.sounddoctor.com) to run a null test to precisely set each sub's phase control. I did this by reversing one of the speaker cables to the Salon2 in the same channel as the sub being matched. Playing the Sounddoctor tone, I placed my head between the Salon2 and its partnering Fathom f212v2. Turning the sub's Phase knob slowly, I listened for a sudden drop in volume where the out-of-phase outputs of sub and speaker canceled out each other. I found the null point at the 20° setting. I then reversed the speaker cables on both Salon2s, to put each sub and its Salon2 back in phase.

DARO

Each sub's DARO program was run separately. After checking that the sub was in Master mode, I connected

⁵ See my review of the Revel Ultima Salon2 in the June 2008 issue: www.stereophile.com/floorloudspeakers/608revel/index.html.

⁶ See <http://studiosixdigital.com/audio-hardware/itestmic/itestmic-information.html>.

the microphone and cable supplied with the f212v2—JL Audio's instructions stress that this is the only mike suitable for use during DARO calibration—to the sub's front-panel jack, placed the JLA calibration mike on the back of my listening chair at ear level, and pressed the Calibrate button. The Calibrate LED began to slowly flash red, and within seconds the sub had begun to emit pink noise at high levels. After 90 seconds, the output droned for an additional 90 seconds. The pink noise was loud enough to rattle anything in the room that wasn't tied down, including a radiator cover at the base of the left wall. Then the Fathom f212v2 fell silent, its Calibrate LED glowing steady green. FFT measurements of the f212v2 alone after DARO tuning showed that the previous irregularities in room response had been minimized (fig.4).

Finally, I switched on the full system. Its room response, 8Hz–2kHz, was more linear than I'd seen with the Salon2s run full-range alone (fig.5). I checked the lowest frequency bands of the half-step-spaced chromatic scale on *Editor's Choice* (CD, Stereophile STPH016-2). These were sharply defined and clearly heard, as were the 40, 31, and 25Hz $\frac{1}{3}$ -octave warble tones on that CD. The 20Hz band was not only audible, it produced a strong pressure wave in the room. Playing "True Blues," from Keith Jarrett's *The Carnegie Hall Concert* (CD, ECM 1989/90) with crossover filters on revealed no discontinuities between subs and main speakers. Whether the Salon2s were run full-range or the subs and main speakers were played with the CR-1 crossover inserted, the midrange and highs remained transparent, the soundstaging wide and deep, and there was no brightening or hardening of the sound.

Music

The CR-1 played a crucial role in this review, letting me hear the benefits of the Fathom f212v2s and bass management in my system. When switched in, the f212v2s increased the Revel Salon2s' bass power, dynamics, extension, and pitch definition. This was remarkable—I regard the Salon2s' bass response as being exceptionally good, yet I heard their bass improve when the stereo subs were playing. This was evident as I listened to John Atkinson's digital recording of the *Tocata* of Widor's *Organ Symphony 5*, performed by Jonas Nordwall at Portland's First United Methodist Church (24-bit/88.2kHz AIFF file). The full system better depicted the deepest (32.7Hz) notes' depth, power, solidity, and mass, but didn't distort or mask the upper registers' transparency. The lowest bass notes weren't so much heard as felt in my feet through the hardwood floor. I also heard this improvement when I played John Busby's recording of *Master Tallis's Testament*, by Herbert Howells, from *Pipes Rhode Island* (CD, Riago 101). With the f212v2s playing, the sustained 32Hz pedal note at the piece's end pressurized the air and rattled loose objects.

Second, the use of two subwoofers enlarged the soundstage, increasing the three-dimensionality of images and giving a better sense of the performing space. I heard this when I played a DSD64 file of a live recording of Michael Tilson Thomas and the San Francisco Symphony performing Beethoven's *Symphony 7* (<http://sanfranciscosymphony.downloadsnow.net/beethoven-7>). Switching in the full system—two speakers and two subs—broadened and deepened the soundstage. And the f212v2's ability to throw a huge, broad, deep soundstage revealed a three-dimensional image of the chorus hovering behind tenor José Carreras in the *Kyrie* of Ariel Ramirez's *Misa Criolla*, conducted by José Luis Acejo (CD, Philips 420 955-2).

The Fathom f212v2's bass resolution was revelatory. When I played Don Dorsey's "Ascent," performed by Erich Kunzel and the Cincinnati Pops on their *Time Warp* collection (CD, Telarc CD-80106), the JLAs' imaging let

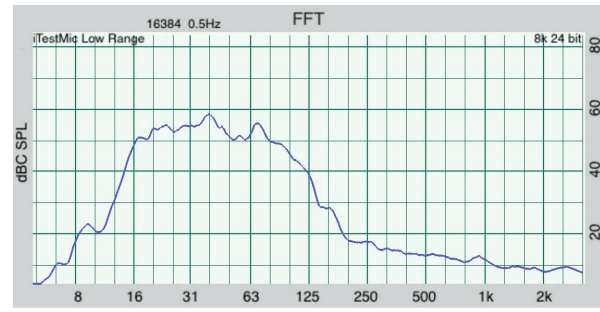


Fig.4 JL Audio Fathom f212v2s, uncorrelated pink noise after DARO, FFT display, low-pass crossover filter on, Salon2s off, in-room response (80dB vertical range). Note that 45Hz peak is diminished.

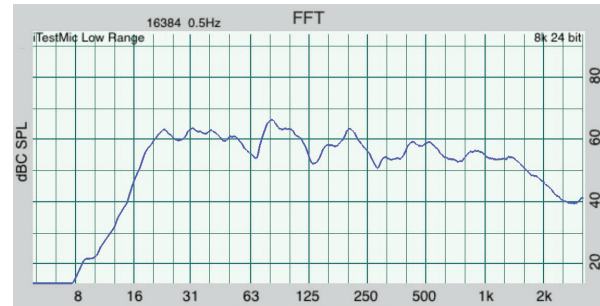


Fig.5 Revel Ultima Salon2s plus JL Audio Fathom f212v2s, uncorrelated pink noise after DARO, FFT display, both filters on, both Salon2s and subs on, in-room response (80dB vertical range).

me better distinguish the positions of the synth beats that move from side to side. Dynamics ranged from soft murmurs to a thunderous rumble as the synths blended into the sustained 31.7Hz organ note that begins Strauss's *Also sprach Zarathustra* on that same disc. The deep pedal notes in *Gnomus*, from organist Jean Guillou's performance of his own transcription of Mussorgsky's *Pictures at an Exhibition* (CD, Dorian DOR-90117), were more focused and deep—with the Fathom f212v2s switched in, I felt them mostly through my feet as the floor shook. It surprised me that the full speakers-plus-subs system reduced in level and focused the massive, almost infrasonic organ notes in *Pie Jesu*, from John Rutter's *Requiem*, performed by Timothy Seelig and the Turtle Creek Chorale (CD, Reference RR-57CD), to better balance the pipe organ with the soprano, chorus, and other instruments. Similarly, it was easier to follow organist Olivier Latry's pedal notes in the first movement of Saint-Saëns's *Symphony 3*, with Christoph Eschenbach conducting the Philadelphia Orchestra (SACD/CD, Ondine ODE 1094-5). These changes exemplified the quality of "better bass rather than more bass" that Kal described in his f113v2 review.

The JLA combo of Fathom f212v2 and CR-1 strongly benefited the quality, scale, detailing, and full power of orchestral music by enhancing the depth and width of the soundstage while revealing ambience cues. I felt and heard the jaw-tightening mass of the bass-drum strokes in the second section of Stravinsky's *The Rite of Spring*, performed by Eiji Oue and the Minnesota Orchestra (DVD with 24/96 WAV file, Reference RR-70 HDCD). They burst into my listening room as dense, concussive *thuds* with clean, defined leading edges.

The Revel-JL Audio combo delivered the deepest, most powerful synthesizer chords on my soundtrack recordings, particularly the growling, explosive, mind-jarring mix of synth and percussion that drives "Assault on Ryan's House," from James Horner's score for *Patriot Games* (CD, RCA 66051-2). The massive synth note that opens "Deeper

Well,” from Emmylou Harris’s *Spyboy* (CD, Eminent EM-25001-2), was more focused and less blurred with the f212v2s in circuit—I could more clearly hear the words in Harris’s song, as well as the drums and guitar.

Comparison

For comparisons with the Fathom f212v2 I selected Revel’s Ultima Rhythm2 powered subwoofer⁷ for its superior build quality, inclusion of low- and high-pass filters, and similar price. At \$10,000, a Rhythm2 subwoofer costs the same as one Fathom f212v2 (\$7000) with CR-1 (\$3000). Adding a second f212v2 brings the total to \$17,000. Both subs offer high power, great bass extension, powerful internal amplifiers, clean high- and low-pass filters, and delay adjustments to time-align the outputs of subs and satellites. And both are extremely heavy, requiring two people to unpack and move them into a listening room.

The Fathom f212v2’s DARO is fully automatic; the Rhythm2’s room-optimization system requires separate FFT measurements and hand-tailoring of individual equalizer frequency and Q settings. The f212v2 has 18 bands of equalization to the Rhythm2’s 10. Unlike the Rhythm2, the f212v2 comes with four Waxman Super Sliders, a hard copy of its glossy, two-language comprehensive manual, and the calibration microphone and mike cable. The Rhythm2’s manual, test tones, and most of its control functions are available as downloads from Revel’s website.

On the other hand, the Rhythm2’s single 18" woofer offers 12% more area (254 in²) than do the f212v2’s two 12" drivers (226 in²). The Rhythm2’s two internal amplifiers are 11% more powerful, with peak power ratings of 4kW vs the Fathom’s 3.6kW. The f212v2 is taller and weighs 28 lbs more, making it harder to move around than the Rhythm2. The Rhythm2’s Q-tuning of its equalizer bands offers a more fine-gained adjustment capability. Only the Rhythm2 can modify the sub and satellites’ output to smooth the room response.

Both subs pressurized the air and vibrated the floor of my listening room while delivering similar deep-bass extension, pitch definition, dynamic range, and slam. With some recordings, the JL Audio combo of Fathom f212v2 and CR-1 created a deeper, wider, more three-dimensional soundstage than did a single Rhythm2. Because I didn’t have a second Rhythm2, I couldn’t determine if two of them could produce the same improvements in soundstaging.

Conclusions

With the release of the Fathom f212v2, JL Audio has made important changes to the f212’s internal design, most notably the new DARO 18-band equalizer. This increased the precision and reliability of the sub’s setup, and produced easily heard and measurable improvements in deep-bass clarity. The Fathom f212v2’s sound was quicker, more solid, and had better bottom-end authority than did the v1. Two f212v2s significantly widened and deepened the soundstage, and better retrieved ambience cues. The CR-1 crossover was a godsend for blending of the outputs of speakers and subs, and it let me hear the improvements in real time when I switched in the f212v2s: increases in bass extension, pitch definition, deep-bass power, and soundstage imaging.

ASSOCIATED EQUIPMENT

Analog Sources Linn Sondek LP12 turntable with Lingo power supply, Linn Ittok tonearm, Spectral moving-coil cartridge; Day-Sequerra 25th Anniversary FM Reference tuner.

Digital Sources Bryston BCD-1 CD player & BDP-2 media player with IAD sound board & BDA-3 DAC; Lenovo W510 laptop computer running Windows 7 (64 bit), Mark Levinson USB driver, JRiver Media Center 20.

Preamplifier Bryston BP-26.

Power Amplifier Mark Levinson No.334.

Integrated Amplifier Mark Levinson No.585.

Loudspeakers Revel Ultima Salon2 & Ultima Rhythm2 subwoofer.

Cables Digital: Wireworld Starlight coaxial. Interconnect: Bryston balanced, Mark Levinson Silver, Pure Silver, Red Rose Silver One, Totem Acoustic Sinew single-ended. Speaker: Coincident Speaker Technology CST 1, Pure Silver R50 biwire double ribbon, QED X-Tube 400, Ultralink Excelsior 6N OFHC.

Accessories Studio Six iTestMic; Apple iPhone6 & iPad; Torus Power Isolation Unit Tot Max (120V, 10A max, 2400VA, 6 outlets); Studio Six ProMic1 Audio Analyzer.

Listening Room 26' L by 13' W by 12' H with semi-cathedral ceiling, moderately furnished with sound-absorbing furniture. Left wall has large bay window covered by Hunter Douglas Duette Honeycomb fabric shades. Rear of room opens into 25' by 15' kitchen through 8' by 4' doorway.—Larry Greenhill

Those interested in buying the Fathom f212v2 should keep a few things in mind: First, this is an expensive subwoofer that will do best in large rooms. Second, it’s the heaviest and densest audio component I have encountered—don’t underestimate the challenge of moving it around. For this nosebleed price, demand that the dealer transport, unpack, and employ at least two people to move it into position. Third, realize that getting the best sound from the Fathom f212v2 requires time and patience, as well as learning how to use its controls. Set up poorly, one or two f212v2s can mess with your sound. To give you a leg up, ask the dealer to include an iTestMic, and to pay the iTunes bill for Audio Tools.

Reviewing the Fathom f212v2s let me experience once again the thrill of discovering an exceptionally powerful new subwoofer. And JLA’s CR-1 electronics crossover was a total surprise—I wondered where it had been all my life. It’s beautifully made, sonically transparent, performs a critical role in the optimal setup of subwoofers, and has ergonomic bypass and mute functions that let you immediately hear the sonic improvements of good bass management. JL Audio’s Fathom f212v2 subwoofer and CR-1 crossover are strongly recommended. ■

⁷ See my review of the Revel Ultima Rhythm2 in the February 2015 issue: www.stereophile.com/content/revel-ultima-rhythm2-powered-subwoofer.