

ROBERT SCHRYER

# Moon by Simaudio Voice 22

## LOUDSPEAKER

I'm picturing a gaggle of cigar-chomping Simaudio execs in an office discussing what to do about the fact that their high-end amplification lines have become so successful that their names have become synonymous with the company. "In the '90s, people thought our company was called Celeste," one floor-pacing exec says, speaking for everyone in the room. "Now they think we're called Moon! How do we fix this?" After much debate, a member shouts: "We add 'by Simaudio' at the end!" The execs hoot, holler, and slap the conference-room table—and thus is born Moon by Simaudio.

A fictional account? Sure, but, as they say in the movies, it's based on a true story. In fact, I intended it as a sort of parable, the message being that we humans always seek balance. The name "Moon by Simaudio" struck a balance, like a see-saw, the two brands pivoting on the word "by."

For those who remain confused about the naming: Simaudio is the company. Moon is a line of products produced by the company. When referring, eg, to the monoblock amplifier we recently reviewed, it's common to write, or say, "Simaudio Moon." That isn't wrong, but "Moon by Simaudio" does a better job of conveying the relationship between the two words, the company name and the name of the line of components.

Another example of the search for balance can be found in the company's decision to stray from its amplification roots into digital sources and enter the all-in-one product category with its ACE: just add speakers. The ACE then became the catalyst for yet another product. To quote the literature for the Moon Voice 22, "The ACE is



a popular mid-priced product, and so many times we've been asked if speaker X-Y-Z would be a good match with it. Now, with the 22s, there can be no doubt about the match between speakers and the ACE, whether regarding sensitivity, impedance, or sonic presentation." It's a match—or balance—that earned the ACE/Voice 22 combination the EISA Award for High-End Audio System 2022–2023.

The Voice 22 is smallish—7.9" (20cm) W, 13.8" (35cm) H, 11.4" (29cm) D. Look at it on a table or stand, and it appears weightless,

## SPECIFICATIONS

**Description** Two-way, standmounted, reflex-loaded loudspeaker. Drive units: 1.14" (29mm) textile-dome tweeter with waveguide, 6.1" (155mm) mineral-filled polypropylene-cone mid/bass driver. Frequency response: 55Hz–24kHz, ±3dB. Frequency range:

45Hz–30kHz, –6dB. Sensitivity: 89dB/2.83V/m. Nominal impedance: 6 ohms. Recommended power: 50–150Wpc.

**Dimensions** 7.9" (200mm) W × 13.8" (350mm) H × 11.4" (290mm) D. Weight: 10.35lb (4.68kg) each.

**Finishes** Black piano, white

piano.

**Serial number of units reviewed** MV2221390030BG. (Designed in Canada, built in Indonesia.)

**Price** \$3200/pair. Approximate number of dealers: 100. Warranty: 10 years. Optional stands in black Sandtex finish: \$400

(made in Canada by Target Audio).

**Manufacturer** Simaudio Ltd., 1345 Newton Rd., Boucherville, Québec, J4B 5H2, Canada. Tel: (450) 449-2212. Web: simaudio.com.

floating about an inch off the surface. This is not due to any Moondust magic. It's an optical illusion attributable to the speaker's removable "hover" base, a tapered platform magnetically affixed to the speaker. On the underside of the base is Poron—a rubberlike material—which compresses under the weight of the speaker and isolates it mechanically, converting vibrational energy into heat. It also protects the surface under the speaker, keeping it safe from scratches while holding the speaker stably in place.

Like all speakers, though, the Voice 22 sounds best when positioned carefully on an appropriate stand. Moon supplies a stand made by Target Audio especially for the Voice, a steel one in a black powder-coat "sandtex" finish (\$400/pair). When the stand is used, the "hover" base is removed from the bottom of the speaker; some effort is required to pry it off. The top of the stand—also equipped with the damping material—extends up into an indentation in the speaker base, forming perhaps the snuggest, most secure speaker/stand integration I've encountered.

The Voice uses a 1.14" (29mm) textile-dome tweeter with a large surround and a waveguide optimized for directivity; the waveguide allows the Voice 22 to cross over to the woofer at a lower-than-usual frequency, which is useful in a two-way. The tweeter employs a saturation-controlled motor system to reduce distortion and a "nonreflective"<sup>1</sup> rear chamber for improved dynamics. The long-throw woofer's 6.1" (155mm) cone is made of polypropylene that's mineral-filled to increase its stiffness-to-weight. It's equipped

with a cast aluminum basket, a soft, low-damping rubber surround for good transient response, and a pole piece that's vented to reduce compression and coated in an extended copper sleeve for low inductance and distortion.

Why not a paper membrane? In one of our several conversations, Moon Product Director Dominique Poupart explained: "Paper works great, but we preferred to use polypropylene because it's a more stable material for various environments, especially humid ones, and quite simply for the sound we managed

<sup>1</sup> Presumably, this means that the back wave from the driver is absorbed or diffused—a very common feature in loudspeakers. —**Jim Austin**



## MEASUREMENTS

I used DRA Labs' MLSSA system and a calibrated DPA 4006 microphone to measure the Simaudio Moon Voice 22's behavior in the farfield, and an Earthworks QTC-40 mike for the nearfield responses. As the loudspeaker's manual recommends that the grille be left off for the "best results," the measured behavior was taken without the grille.

The Moon Voice 22's sensitivity is specified as 89dB/2.83V/m; my B-weighted estimate was inconsequentially lower, at 88dB(B)/2.83V/m. The Voice 22's nominal impedance is specified as 6 ohms. The speaker's impedance magnitude (fig.1, solid trace) remains above 6 ohms in the upper midrange and treble, but drops below 4 ohms in the bass and lower midrange, with a minimum value of 3.4 ohms at 184Hz. The electrical phase angle (dotted trace) is occasionally high, which means that the equivalent peak dissipation resistance, or EPDR,<sup>1</sup> lies below 3 ohms for much of the bass and midrange. The mini-

mum EPDR values are 1.9 ohms at 34Hz, 2.1 ohms at 54Hz, 1.63 ohms at 117Hz, and 2.24 ohms at 373Hz. The Voice 22 needs to be paired with amplifiers that don't have problems with low impedances.

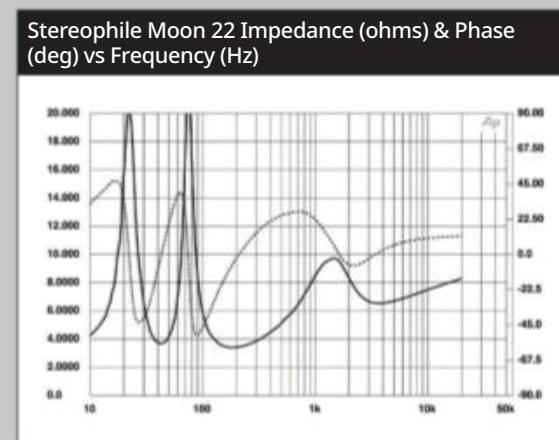
The enclosures' side and top panels emitted a "plink" when I rapped them with my knuckles. When I investigated these panels' vibrational behavior with a plastic-tape accelerometer, I found a strong resonant mode at 555Hz (fig.2). I always measure a loudspeaker's vibrational behavior with it sitting on three upturned cones, which allows the resonant modes to be fully developed.<sup>2</sup> However, as the Voice 22 has a compliant pad inserted into its base, I repeated this measurement with the speaker sitting directly on the floor. This reduced the level of the resonant mode by 5dB. In any case, as the mode is both relatively high in frequency and has a high Q (Quality Factor), its effect on music will be minor.

The Moon speaker's impedance-magni-

tude plot has a saddle in the bass centered on 42.7Hz, suggesting that this is the tuning frequency of the port on the rear panel.

<sup>1</sup> EPDR is the resistive load that gives rise to the same peak dissipation in an amplifier's output devices as the loudspeaker. See "Audio Power Amplifiers for Loudspeaker Loads," *JAES*, Vol.42 No.9, September 1994, and [stereophile.com/reference/707heavy/index.html](http://stereophile.com/reference/707heavy/index.html).

<sup>2</sup> See [stereophile.com/features/806/index.html](http://stereophile.com/features/806/index.html).



**Fig.1** Simaudio Moon Voice 22, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).





to get from it. It's a material with highly similar sonics to the textile material used for the tweeter. Achieving good integration of sound from the drivers depends not only on the crossover but also on the similarity of the sonic color of the respective drivers. For example, metal domes typically have a brighter, shinier sound—which you may or may not prefer, but it has a unique timbre. That means that even with the best-designed crossover and tweeter, if the timbre of the separate drivers is not alike, or at least similar enough, the loudspeaker will sound different in different frequency bands, which causes the reproduction to be unnatural, especially noticeable in a two-way loudspeaker. A real piano keeps the same timbre when playing its low notes or its high notes.<sup>2</sup> A loudspeaker should behave the same way. For the Voice 22, we worked to make sure the two drivers were well matched in terms of sonic character.”

At 1.5kHz, the Voice 22's crossover frequency is low for a two-way standmount equipped with a 6" woofer. Poupart: “There are several advantages to having a low crossover, especially disper-

sionwise. A woofer, by its nature, starts to beam as its frequencies rise. In a lot of loudspeakers, where the crossover frequency is set higher, the woofer will start to beam before the crossover sends the signal to the tweeter, which has a much wider dispersion pattern. This causes a discontinuity in the sound and a global frequency response that'll vary off-axis. In the Voice 22—and this was a design goal—the off-axis dispersion is very good throughout the frequency range.

“Another advantage is [that] a tweeter produces lower distortion than a woofer. Having the tweeter playing lower in the midrange lowers the distortion in the upper midrange and gives the Voice great clarity and definition in that register. Not all tweeters can behave well in such a low frequency range, but we designed our tweeter so it could.”

The crossover itself is assembled on a dual-layer PCB using met-

<sup>2</sup> This is true of very good real pianos—not all real pianos.—Jim Austin

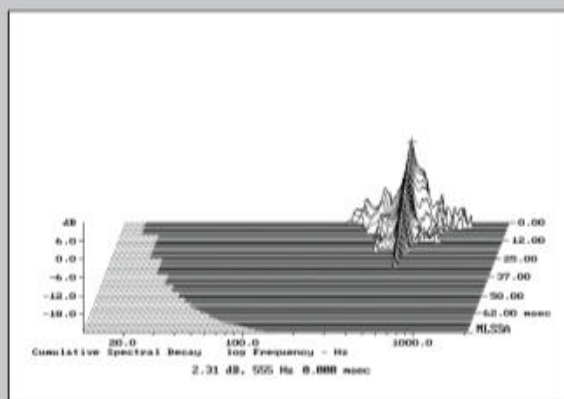
## measurements, continued

The woofer's nearfield response (fig.3, blue trace) has the expected reflex notch at this frequency, and the port's output (fig.3, red trace) peaks between 35Hz and 70Hz. The port's upper-frequency rolloff is clean overall, though some resonant peaks are present between 700Hz and 900Hz. These are low in level, however, and their audibility will be reduced by the fact that the port faces away from the listener. The complex

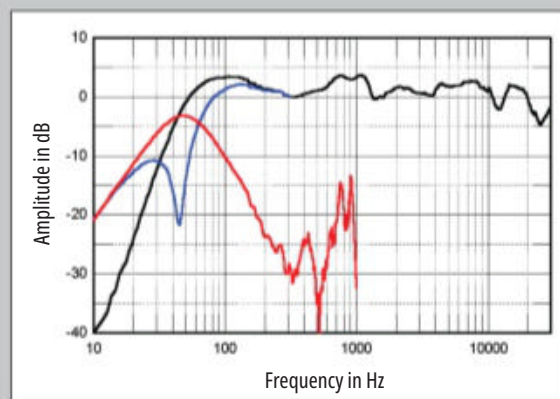
sum of the woofer and port responses is shown as the black trace below 300Hz in fig.3. The apparent boost in the upper bass is mostly an artifact of the nearfield measurement technique. The Voice 22's reflex alignment appears to be maximally flat, in textbook fashion.

The Voice 22's farfield output, averaged across a 30° horizontal window centered on the tweeter axis (fig.3, black trace

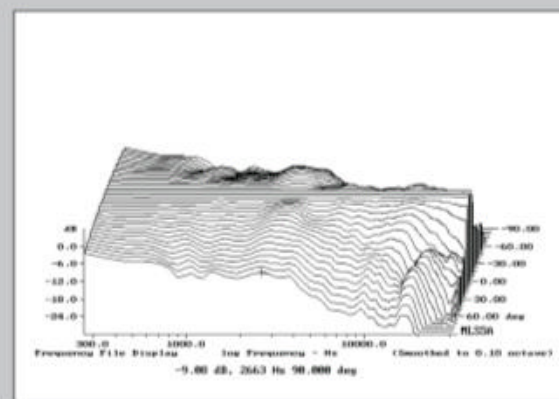
above 300Hz), has too much energy in the octave between 700Hz and 1.4kHz, though the speaker's output in the region covered by the tweeter is relatively even. In itself, that boosted upper midrange might add a touch of nasality to the speaker's tonal balance. However, the plot of the Moon speaker's horizontal dispersion, normalized to the response on the tweeter axis (fig.4), indicates that there is a shallow



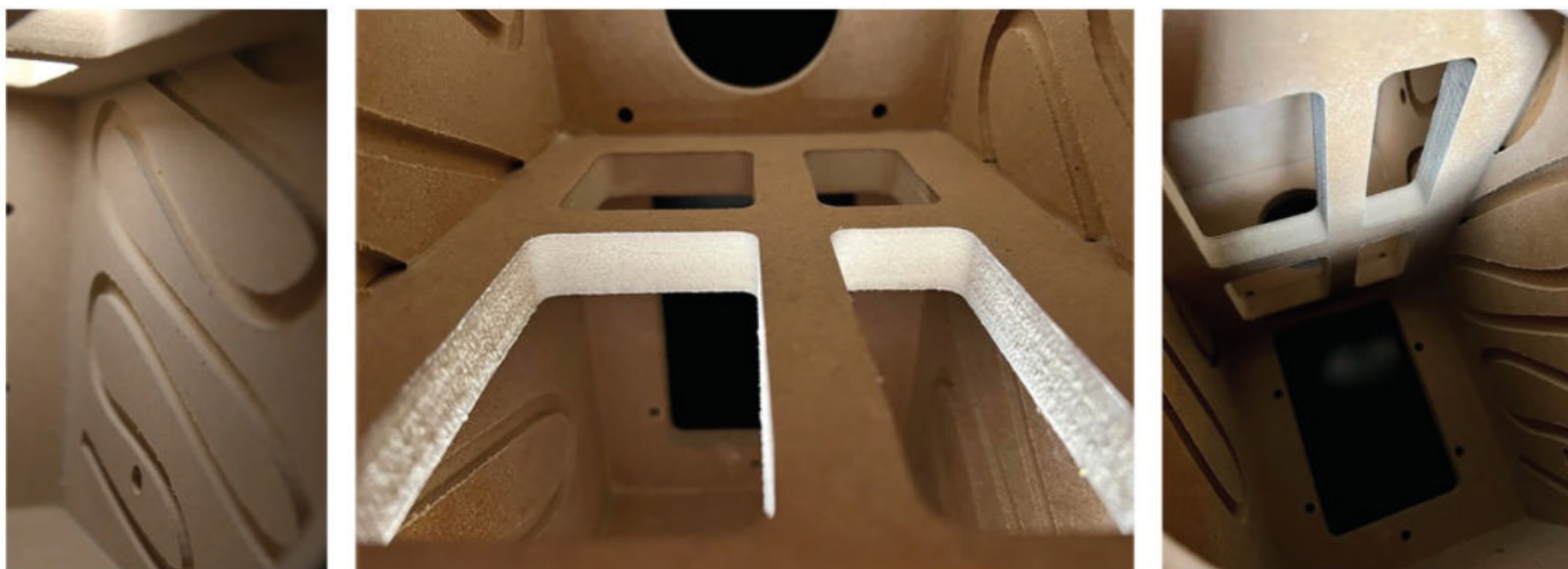
**Fig.2** Simaudio Moon Voice 22, cumulative spectral-decay plot calculated from output of accelerometer fastened to center of sidewall (measurement bandwidth, 2kHz).



**Fig.3** Simaudio Moon Voice 22, anechoic response on tweeter axis at 50", averaged across 30° horizontal window and corrected for microphone response, with the nearfield woofer (blue) and port (red) responses respectively plotted below 300Hz and 1kHz.



**Fig.4** Simaudio Moon Voice 22, 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.



alized polypropylene film capacitors and air-core inductors.

The speakers were designed in Canada but, in contrast to the company's electronics, which are built in Canada, the Voice 22 is built in Indonesia. Poupart said there was simply no way the company could achieve the 22's level of quality, especially when it came to the cabinet's construction and finish, at its intended selling price if it were made in North America.

And that's the catch for these speakers: the playing field. Competition in the 22's price range is fierce. Only one speaker, though, is intended as an ideal companion for the Moon by Simaudio ACE.

During my visit at Moon headquarters, a 30-minute car ride from where I live, Poupart showed me a section view of the cabinet's interior. The outside and inside bracing panels looked chalet-board thick and sturdy. A unique feature is the company's patent-pending CGD (Curved Groove Damping) technology—a squiggly

snake-shaped groove, asymmetrical to the other groove, filled with a damping material, on the inside of each side panel. According to Poupart, "The path of the groove makes the lengths between edges different at any point on the surface, limiting panel resonance."

The Voice 22 is a bass-reflex speaker; its port is flared to avoid chuffing. "The aerodynamics of the port matter," Poupart said. "Air velocity can get quite high with bass, and a port without flared ends can create turbulence in the air flow at greater sound pressures." Their nominal impedance is specified at 6 ohms, its sensitivity at 89dB/2.83V at 1m.

The Voice 22 is available in black or white "piano" finishes.

### Setup

Poupart told me the Voice 22 likes some juice to get going. The manual recommends driving them with a minimum of 50Wpc,

### measurements, continued

gully off-axis in the same region. Other than in small rooms, this behavior will tend to flatten the perceived balance.

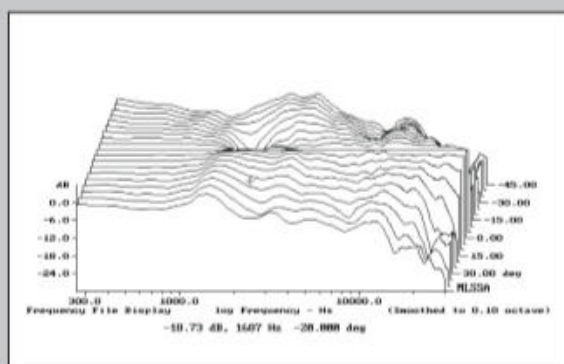
The waveguide that surrounds the fairly large tweeter dome narrows the drive unit's top-octave dispersion in both the horizontal and vertical planes (fig.5). The latter graph suggests that the Moon Voice 22 will sound tonally balanced on or just below the tweeter axis. The cursor posi-

tion in fig.5 indicates that the crossover between the two drive units occurs just below 1.7kHz, close to the specified 1.5kHz.

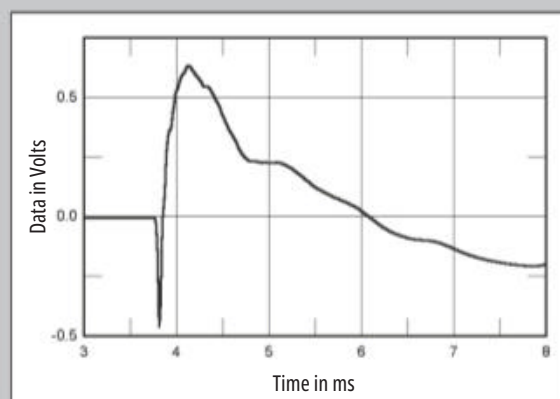
In the time domain, fig.6 shows the Voice 22's step response on the tweeter axis. The tweeter's output arrives first at the microphone, and it is connected in inverted acoustic polarity. However, the positive-going decay of the tweeter's step smoothly blends with the start of the

woofer's step, which suggests optimal crossover implementation. The cumulative spectral-decay, or waterfall, plot (fig.7) is superbly clean.

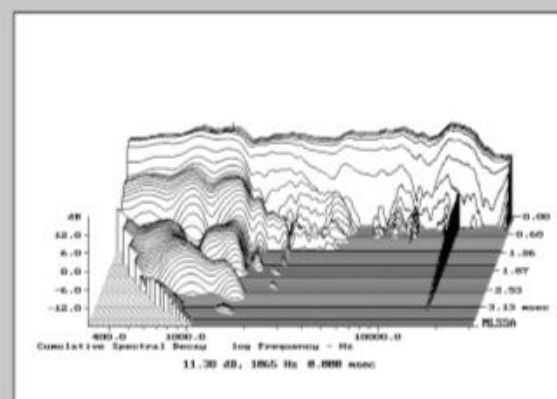
The Moon Voice 22's measured behavior suggests that the on-axis and off-axis behavior has been carefully managed to give a relatively neutral tonal balance, though the upper midrange may still sound a little forward.—John Atkinson



**Fig.5** Simaudio Moon Voice 22, 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** Simaudio Moon Voice 22, step response on tweeter axis at 50" (5ms time window, 30kHz bandwidth).



**Fig.7** Simaudio Moon Voice 22, cumulative spectral-decay plot on tweeter axis at 50" (0.15ms risetime).



but I heard no sign of congestion or clipping using them with my 37Wpc Shinai with music played at normal-to-loudish volume. Still, Poupart wasn't blowing smoke. A word about which, later.

The Voices are designed to be positioned facing forward, not toed in, a setup that has always felt counterintuitive to me: If I'm talking to someone, I expect them to face me so that I can hear them better. But audio, thank its crafty little heart, isn't always so obvious.

Using my own trusty stands, provenance unknown, which placed the tweeters roughly 1.5" above ear level, I attempted both straight and angled positions and their subvariants—toward me, straight ahead, and in slivers of angular pie slices in between. Huh. The designers at Moon were right. The counterintuitive, straight-ahead toe-in (or lack of it) was better. The sound was clearer and more incisive that way, yet also bloomier and more open-air breathy.

The Moons seemed to offer a more stable image than other speakers I've tried at home that work best when toed in toward my ears. When I moved my head sideways to outside the sweet spot, with the speakers pointed forward, the image didn't collapse or shift excessively. The manual advises keeping the space between the speakers and surrounding walls to at least twice the dimensions of the cabinet. Position them too close to a wall, the manual cautions, and the bass could become bloated and sluggish. If that happens, advises the manual, insert the included port foams.

The manual was preaching to the choir when it boldly announced, and I'm paraphrasing, "Remove the grilles before you listen to these speakers! They will sound worse with them on!" You don't have to tell this sharp-witted guy twice after my KLH Three fiasco.<sup>3</sup>

### Listening

I started listening to Brother Jack McDuff's *Moon Rappin'* (LP, Blue Note 84334), which, with the funk-fueled "Flat Backin'" leading off, should leap out of the gate rhythmically. I had to jack the volume knob up pretty far before it would make that leap—my first hint that the Shinai, a 37Wpc solid state integrated with tube-circuit topology, might not be an ideal match, powerwise, for the Voice 22s.

Not that it mattered much. With the Shinai-Voices combo, "Flat Backin'" sounded dynamic and vibrant, its soundstage a big-cityscape of light and movement, airy with a slightly dark-lit quality to it that put sounds in relief. A vibrant cityscape at night.

Drum thwacks popped and quickly retreated in crisp decays. The midtrack drum solo revealed a complex panoply of force intensities, surface textures, and technical nuance. Cymbal taps produced a realistic tink-bell sheen, microrattling splash, and granular trickling of notes dripping out and diverging.

While the 22's treble couldn't reach the same airy heights of my twice-the-price reference Focal Aria K2 936 speakers, the

Voices reproduced an introspective, well-lit environment bathed in texture and space. They were adept at exposing reverb. How adept? I couldn't help noticing how much the engineers responsible for this record loved reverb—so much that they added it to everything that moved and some things that sat still. The voices showed me all that. This wasn't the overexposed imagery of a tilted-up frequency response, which erases lines. The Voices unearthed lines—imprinted them. This was my first indication that the Moon Voice 22s have a special way with space.

The 22s made all that reverb sound less like what it was dangerously close to sounding like—an overused, music-dating studio gimmick—and more like it was surely intended to sound: a harmonic aureole around each instrument, drawing our attention to it. The effect was resplendent—a multitude of beating, pumping, radiating vortex points that sucked my attention toward the instruments' fuzz-soaked, fluorescent, slightly antiquated bellies.

At times, certain instruments—notably the sax, trumpet, flute (the latter well separated from those drum thwacks out front, maybe 6' farther back)—sounded vivid, animated in a way that brought to mind the intimate physicality that SET amps and electrostatic speakers are known for.

The second bit of evidence of the Voices' special way with space was in how linear and seamless their presentation sounded—smooth, like a freshly Zambonied ice rink. Effects and musical lines slid from one end of my room to the other as if I were listening to a single wall-sized transducer instead of two small standmounts.

The soundstage was divided into three major depths of field—front, speaker-level, and back—knitted together in fine filaments of flowing decays, lasting sustains, and far-flung musical sightlines. McDuff's at-times grumbling and at-other-times jubilant synthesizer notes produced a colorfully lifelike, finger-leapfrogging sound that eviscerated me with lightsaber stabs. Bill Phillips's flute emitted a vibrancy of color-in-movement; it beamed. Joe Dukes's drum hits produced resounding aftershocks. Richard Davis's tightly sprung electric bass notes were bulbous-tipped and resonant. This was the third indication of the Voices' special way with space. They energized it. They shot out sound along clearly delineated paths like lit-up runways. They brought the reverberant energy of notes—harmonic trails—into my listening space in a way that was unusually tactile, omnipresent, and microdetailed. It told me the Voices' resolution was high, not just in relation to the recording but also to my amp's character.

In the mood for more funk jazz, I spun record 005 in the Jazz Is Dead series of analog recordings by funky-jazz torch bearers Ali Shaheed Muhammad and Adrian Younge, with guest organist Doug Carn (45rpm 2 LPs,



<sup>3</sup> With the volume turned up, the KLH Three's grilles produced quite a racket.

Jazz Is Dead, JID005). This is a contemporary funk-jazz release of music propelled by a rhythmically shifting drumbeat taking center stage while loping forward.

Two things stood out about that drumbeat. The first was its tone, so drenched in reverb that it sounded almost like a steel drum.

Second, while the beat may not have been as viscerally pounding as it is through my reference Focals, it had swagger, which I found magnetic—a sort of pivot-point force that drew other instruments into its orbit. Listen to the sax and trumpet solos through the 22s, and I'm sure you'll hear it, too: the sense of collaboration, the feeding-off-the-beat excitement, the inspirational lift. It made me realize how important the connection between the drum and the other instruments was in making this music work. Loosen that connection, and you dilute the bond—and the music's impact.

This isn't a great recording; it sounds a bit murky and cramped. Still, through the 22s, Carn's organ jabs sounded dynamic, chiseled in space, luminous. Shai Golan's alto sax and Zach Ramacier's trumpet were recorded almost on top of each other, yet even when their playing overlapped and became busy, I could easily distinguish their timbres and melodies. Meanwhile, the soundstage bulged with touchable, bustling, lush-toned life.

Again, that space—harmonic strains washed up to me like musical tides. No doubt the Shinai contributed to that effect, but it was more than that: It showed how coherent the Voices' midband could sound and how good they were at producing a stereo effect.

Next, I listened to six-piece instrumental band Bell Orchestré's album *House Music* (LP, Erased Taped Records ERATP141LP-CA), a rock-and-chamber-music-influenced work split into 10 heart-palpitating movements constructed ornately of soaring, plucked, bowed, blown, and chanted sounds. Through the Voices, bowed violins sounded thick, textured, guttural. Double bass plucks provided a tactile, supple, pulsing undercurrent. Drum and cymbal hits were hyperfocused. The French horn rang with a golden, burnished glow. It sounded majestic.

Despite all those moving layers, the 22's presentation was moving-picture smooth. All its drama and glistening textures cohered.

Next up: Alice Coltrane's *Journey in Satchidananda* (LP, Impulse! IMP-228), recorded at Coltrane's home studio in Dix Hills, New York. The 22s provided a close, explicit perspective on the recorded performance. Pharoah Sanders's searing sax solos sounded pure and extended. Coltrane's rapid notes flicked out like confetti flurries. Through my Focals, Cecil McBee's double bass is almost

## ASSOCIATED EQUIPMENT

**Analog source** Rega P5 turntable with RB700 tonearm and Audio MusiKraft Denon DL-103 cartridge.

**Preamplifier** Sonic Frontiers SFP-1 Signature phono preamp.

**Integrated amplifier** Grandinote Shinai.

**Loudspeakers** Focal Aria K2 936.

**Cables** Interconnect: Audience Studio ONE. Speaker: Audience Studio ONE, Kimber Kable Monocle XL. Power: Shunyata Research Black Mamba CX, LessLoss DFPC.

**Accessories** Shunyata Research Venom PS8 power conditioner; a component rack and a wood plinth stand (under turntable) whose brand names are lost to time.—Rob Schryer

too ripe. The Voices shaved off some of the bloat, adding definition and articulation.

During one passage in the album's second track, "Shiva-Loka," all the sounds culminate in a mike-overloading white-noise climax. Still, I was able to sort out from within the melee the various shakers and tambourines and, in some cases, their relative positions. The soundstage seemed to reach my ears not from speakers but from all around the room, from many angles, a vibrant-toned hologram that seemed alive, spontaneous, quilted together yet liberated not just from the speaker cabinets but from the instruments themselves.

### The end

Auditioned in my system, the Moon Voice 22's most conspicuous sonic attribute was its well-sorted, seamless midrange.

Listening to these speakers inspired, in the introduction to this review, the subject of balance: balance in the stereo image; the balance between the drivers, in how they seemed to complement each other and sound uniformly in sync, at times almost like a single, full-range driver. When one hears this type of continuousness, the brain relaxes because it has less work to do trying to sort it all out; the stereo construct—the illusion of a real sonic event—is easier to accept.

The Voices provided a sense of motion-picture fluidity that made it easy to give myself over to their storytelling, to forget the machinations and illusions hi-fi is built on. They attuned me to something I hadn't paid much attention to before: That it's not only the direct sound from instruments that constitutes music but the subsequent sounds that those original sounds give rise to in a room. The Voices made me think of that.

Take those power requirements seriously; the Voices would have benefited from a bit more power than my Grandinote Shinai could provide. Yet, in my listening room, the Shinai-powered Voice 22s provided an attractive combination of soundstage energy, touch, and lustrous density. The best recorded sound is the recorded sound you forget you're hearing because the music takes over. The Voices facilitated many such moments, sending me on frequent side trips of mindful musical immersion. ■

