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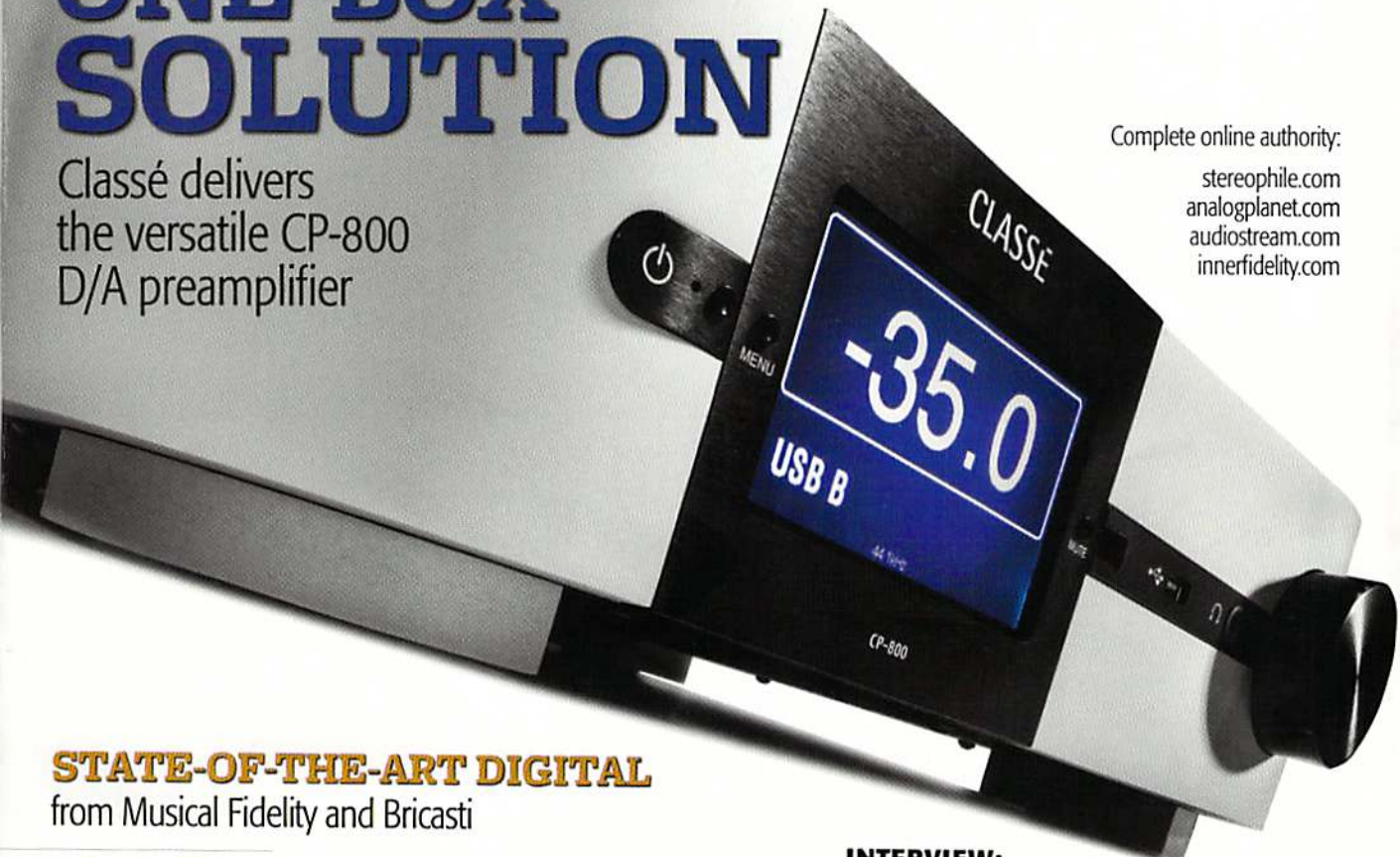
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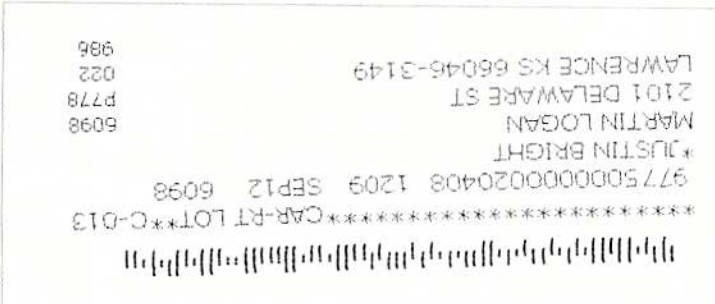
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ROBERT DEUTSCH

MartinLogan Montis

LOUDSPEAKER



One of my formative audiophile experiences was the first time I heard electrostatic speakers. I walked into an audio store and heard music played by a live jazz combo. But where were the musicians? I saw none, though I did notice a couple of room-divider panels in the part of the store where the music seemed to be

coming from. Eventually, it dawned on me that these must be *loudspeakers*—but they sounded like no other speakers I'd ever heard, and nothing like the Advents I had at home.

Those room dividers turned out to be KLH Nine electrostatic speakers. My Advents, good as they were, sounded like speakers; *these* sounded more like live music. The price was

SPECIFICATIONS

Description Two-way, floorstanding, electrostatic loudspeaker with a powered dynamic woofer. Drive-units: 44" (1118mm) H by 11.3" (287mm) W XStat CLS electrostatic high-frequency transducer (radiating area, 497in.² [3209cm²]); 10" (254mm) high-excursion, aluminum-cone woofer. Crossover frequency: 340Hz.

Frequency response: 29Hz–23kHz, ±3dB. Horizontal dispersion: 30°. Vertical dispersion: 44" (1120mm) line source. Sensitivity: 91dB/2.83V/m. Impedance: 4 ohms, 0.52 ohm at 20kHz. Compatible with 4, 6, or 8 ohm rated amplifiers. Woofer amplifier: 200Wpc (4 ohms). Recommended amplification: 20–500Wpc. Audio controls:

±10dB under 100Hz. Lighting: LED intensity control (On/Dim/Off). Power draw: Idle: <1Wpc (idle), 200Wpc (maximum). **Dimensions:** 59.3" (1505mm) H by 12.7" (322mm) W by 18" (457mm) D. Weight: 58 lbs. (26.3 kg). **Finishes** black ash, dark cherry, black cherrywood.

Serial numbers of units reviewed MTWH 000, MTWH 001. **Price** \$9995/pair. Approximate number of dealers: 74.

Manufacturer MartinLogan, 2101 Delaware Street, Lawrence, KS 66046. Tel: (785) 749-0133. www.martinlogan.com.



The switch adjusts the illumination of the MartinLogan logo; the knob controls woofer level.

something like \$2000/pair, more than 10 times the price of the Advents—completely out of my price range at the time.

Back then, I had a habit of checking the Stereo Equipment section of the newspaper's classified ads, looking for bargains, and a few years after my initial experience with the KLH Nines, I saw an ad for a pair of them. It wouldn't hurt to just go and hear them, would it? I ended up buying them for a somewhat-manageable \$500, and I was happy. The speakers sounded terrific—when they worked. The tweeter was particularly trouble-prone; after a while it would begin to make buzzing sounds that, I discovered, indicated arcing. I replaced it three times, and always dreaded that it would start acting up again. Then there was a problem with the

power-supply-and-crossover module, which was potted in paraffin wax and had to be shipped to Boston to be fixed. This happened twice. I finally lost my patience and got rid of the Nines, but not without regret. I later owned a pair of original Quads, which were more reliable, but their limited dynamic range and lack of bass bothered me. I tried adding subwoofers, but that solution wasn't entirely satisfactory.

I've long admired the electrostatics made by MartinLogan, and at one point was about to review one of their hybrid models when those plans fell through. Then, a few months ago, MartinLogan's then PR agency suggested that I consider reviewing either the entry-level ElectroMotion EM-ESL (\$2195/pair) or the about-to-be-introduced Montis (\$9995/pair). I'd heard the EM-ESL at a dealer's and had been impressed by its sound, especially for the price—but I was even more impressed by the sound of the Summit X (\$14,995/pair). The Montis uses the same electrostatic tweeter/mid-range drive-unit as the Summit X, but has a single 10" woofer instead of the Summit X's two. I went for the Montis.

Not in Kansas Anymore

I've always thought of MartinLogan as being located in Lawrence, Kansas—and, indeed, that's the address on the company's website. I was then surprised when the review samples of the Montis arrived, and stickers on the boxes said "MADE IN CANADA." I knew that MartinLogan, like Paradigm and Anthem, is now owned by ShoreView Industries, of Minneapolis, but hadn't realized that all ML speakers are now built in the same Canadian factory where Paradigm speakers and Anthem electronics are made. (Product development for MartinLogan is still in Kansas.) To ensure that MartinLogan speakers maintain the level of quality established in the Kansas facility, they've set up a production line in the Mississauga, Ontario factory dedicated to MartinLogans, and have thoroughly trained the workers in the technology required for

MEASUREMENTS

I used DRA Labs' MLSSA system and a calibrated DPA 4006 microphone to measure the MartinLogan Montis's frequency response in the farfield, and an Earthworks QTC-40 mike for the nearfield and spatially averaged room responses. A note on these measurements is in order:

When a speaker is measured, there is a hidden assumption that the distance between speaker and measuring microphone is significantly larger than the speaker's greatest dimension. With all but very large box speakers, this assumption is true. However, it is almost never true with panel speakers when the measurements are performed with a quasi-anechoic technique in a regular room. It is just not practicable to move the mike far enough away without drastically compromising the measurement's midrange resolution, due to the need to window out reflections of the sound from the room's boundaries. I

try to measure such speakers outdoors, to eliminate all room boundaries other than the floor; see, for example, my measurements of the MartinLogan Prodigy (www.stereophile.com/content/martinlogan-prodigy-loudspeaker-measurements). However, this wasn't possible during the period in which I had to prepare this review.

I estimated the Montis's B-weighted voltage sensitivity as a high 90.5dB(B)/

2.83V/m, which is within experimental error of the specified 91dB. As with other MartinLogan electrostatic loudspeakers, the Montis's impedance drops to a very low value at the top of the audioband. The Montis is specified as having an impedance of 0.52 ohm at 20kHz. My measurement (fig.1), taken with an Audio Precision System One, gave a figure of 0.7 ohm at 20kHz, but this included 15' of speaker cable. Repeating the measurement using the DRA Labs MLSSA system, which compensates for the speaker-cable impedance, gave a figure of 0.55 ohm at 20kHz. Either way, that this speaker is a difficult load for the partnering amplifier to drive is compounded by the high electrical phase angle, and ameliorated only by the fact that music rarely has high levels of energy in the top octaves.

The drastic rise in impedance below 400Hz in fig.1 is due to the high-pass filter in the panel's signal path, which will relieve the amplifier of having to deliver

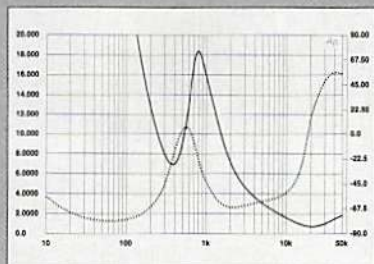


Fig.1 MartinLogan Montis, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).

these speakers. In fact, ShoreView Industries used the transfer of production from Kansas as an opportunity to tighten tolerances and improve consistency. I was impressed by the obvious attention to detail and concern for maintaining the highest possible quality in manufacturing.

Design

MartinLogan specifies the Montis as being 59.3" high, 12.7" wide, and 18" deep. This is correct in the sense that a shipping box for the speaker must accommodate these dimensions, but most of the 18" depth is accounted for by the woofer box; the depth of the electrostatic tweeter/mid driver, including the frame, is only about 1 1/4". Compared to MartinLogan's Prodigy (see Larry Greenhill's review at www.stereophile.com/floorloudspeakers/390), the Montis is shorter by more than 7.7" and narrower by 4.5". Larry described the Prodigy (which weighs 133 lbs compared to the Montis's 58 lbs) as "imposing," which is not a word I would use to describe the Montis—perhaps *velte* or *elegant*. The Montis's size and proportions looked just right in my 16' by 14' by 7.5' listening room, the perforated steel stators of its electrostatic tweeter/mid producing a see-through effect.

By almost any standard, the Montis is beautiful. The review samples' bass cabinets were finished in hand-rubbed, glossy black cherrywood, which does look almost black in low light but is an attractive dark red in brighter light. The middle third of the top of the bass cabinet has a black metal trim, curved to match the design of the tweeter/mid electrostatic element, and features the MartinLogan logo, which lights up in blue when the speaker is playing. (It can be turned off.) On the rear panel is a single set of five-way binding posts—again, very stylish, and easy to tighten by hand if you're using spade lugs—and a knob for setting the woofer level. The speaker comes with four rubber feet installed; these can be replaced with spikes (provided). When feet or spikes are fully screwed in, the electrostatic panel is tilted slightly back; this can be adjusted by partially unscrewing the front or back feet.

MartinLogan's initial claim to fame was the development of the Curvilinear Line Source (CLS) electrostatic panel, designed to prevent treble beaming and the resulting highly restricted sweet spot produced by flat panels. Instead of flat electrode panels, the CLS driver has perforated metal panels that are bent to produce a gentle curve. The concept may seem simple, but to put it into practice requires a great deal of technical expertise and meticulous care in manufacturing. The distance between the diaphragm and each electrode, or stator, must be the same throughout the entire panel, to avoid hot spots in the response. Achieving this is partly a matter of manufacturing tolerances—the curve must be exactly the same for each stator—and is partly maintained by the spacers that keep diaphragm and stator apart. These, too, must be manufactured to a high tolerance. As far as I know, MartinLogan is the only manufacturer of electrostatic speakers to use curved panels. The Sound Lab electrostatics, which appear to be curved, actually have faceted panels with flat sections.

Extensive information on electrostatic theory and details of MartinLogan's technologies are available at www.martinlogan.com. The Montis electrostatic panel is the largest used in any of ML's current electrostatic hybrid speaker models. The MartinLogan CLX ART has electrostatic panels that are larger still, but the CLX is nominally a full-range electrostatic, not a hybrid. (I say "nominally" because the CLX's low-end limit is specified as 56Hz, and in every demo I've heard, it's been combined with a pair of subwoofers.) The Montis's electrostatic panel is a true dipole, radiating to the front and to the rear with no attenuation of the backwave. The crossover to the woofer is at 340Hz. My first thought was that this was on the high side—when I used a subwoofer with the KLH Nines and the Quads, I used to set the crossover frequency in the 80–100Hz range. However, that comparison is misleading. The KLH Nine and the Quad had separate midrange drivers and tweeters, with built-in crossovers. The Montis's electrostatic panel functions as midrange and

measurements, continued

high currents at low frequencies. The shape of the impedance trace will result in the Montis's top octaves shelving down when the speaker is driven by a tube amplifier having a high source impedance. This is why Robert Deutsch found that his Audiopax amplifier sounded too soft and lacking in definition.

By definition, the panel won't suffer from cabinet resonances. The small enclosure for the powered woofer also seemed free of resonant modes.

The Montis's electrostatic panel is 46" tall. To perform the acoustic measurements, I placed the microphone level with a point halfway up the panel, but with the panel correctly sloped back. The blue trace in fig.2 shows the speaker's response at 50°, averaged across a 30° horizontal window centered on the mid-panel axis. The powered woofer's level control was set to its minimum for this

measurement, meaning that the behavior shown in the midrange will be almost entirely due to the panel. Although a large number of narrow peaks and dips are apparent, these tend to cancel each other out and will not be audible as such. The response trend from 400Hz to 20kHz

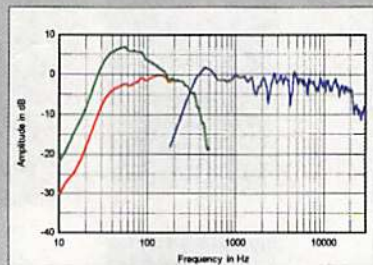


Fig.2 MartinLogan Montis, anechoic response on mid-panel axis at 50°, averaged across 30° horizontal window and corrected for microphone response (blue), with nearfield response of powered woofer set to "-8," (red) and "0" (green), both plotted below 1kHz.

is actually commendably even, though with a slight downward slope that might be a function of the closer-than-optimal microphone distance mentioned above.

The red trace in fig.2 shows the output of the powered woofer, measured in the nearfield, with the level control

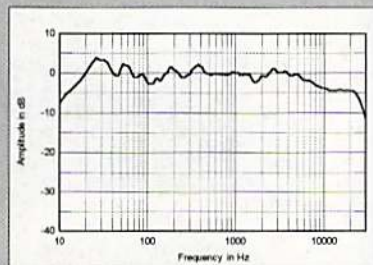


Fig.3 MartinLogan Montis, spatially averaged, 1/3-octave response in JA's listening room.

tweeter, so it doesn't need a tweeter/mid crossover. With a subwoofer, the KLH Nine and the Quad were in effect three-way systems with two crossovers; the Montis is a two-way system with a single crossover.

PowerForce Bass is MartinLogan's name for their powered subwoofer. On the face of it, the Montis's woofer design seems pretty straightforward: a 10", high-excursion, aluminum-cone driver in a sealed box, powered by a 200W amplifier. However, a great deal of the developmental engineering work at ML has dealt with perfecting the blend between the electrostatic panel and the dynamic woofer. With the Montis, their solution was to use an analog high-pass filter derived from the CLX, and digital signal processing (DSP) for the woofer. MartinLogan calls the latter the 24-Bit Vojtko DSP Engine, after Joe Vojtko, the company's chief audio technologist; it functions as a low-pass filter, equalizer, and limiter. The woofer-level control, centered at 100Hz, permits some matching of the bass performance to the room.

Setup

Planar speakers, including electrostatics, are considered difficult to set up, and that was certainly true of the KLH Nines and the original Quads. Maybe I was lucky, but the Montises sounded fine plunked down more or less where I usually place speakers in my room (along the 16' wall), and their performance got only better when I adjusted the usual parameters of listener-to-speakers distance (as close to equal as possible), speakers-to-front-wall distance (ditto), and toe-in and vertical angles. The resulting angle between speakers and listening seat was close to the classic 60°, with the top of the electrostatic panel of each Montis 36" from the front wall.

I adjusted the toe-in angle first using the flashlight method suggested by MartinLogan: point a flashlight at each speaker, and adjust toe-in so that the reflection of the light is in about the same place, left and right. I then tweaked the angle a bit by ear, trying to produce as wide a soundstage as possible without losing center fill. For the KLH Nines and the Quads, the

ASSOCIATED EQUIPMENT

Digital Source Ayre Acoustics CX-7eMP CD player.
Preamplifier Convergent Audio Technology SL-1 Renaissance.
Power Amplifiers Audiopax Model 88 Mk.II, McIntosh MC275LE, Simaudio Moon Evolution W-7.
Integrated Amplifier PrimaLuna ProLogue Premium.
Loudspeakers Avantgarde Uno Nano, GoldenEar Triton Two.
Cables Interconnects, speaker cables, AC: Nordost Valhalla.
Accessories PS Audio PerfectWave Power Plant 5 AC regenerator; Arcici Suspense Rack, PolyCrystal equipment stands; Nordost Sort Kone TC footers; Furutech RD-2 CD demagnetizer. —Robert Deutsch

tweaking of toe-in angle was very critical—even the slightest difference between the left- and right-speaker angles caused a major lateral shift in the soundstage, with an attendant L/R difference in tonal balance. The Montis's curved electrostatic driver made for a much less critical adjustment of this parameter.

Next was to replace the rubber feet with spikes and adjust the vertical angle, tilting the speaker a bit forward from the standard backtilt, and making sure that the angle was the same for both speakers. I used a plumb line. Once I was satisfied with the speaker positions, I played with the bass-level control while listening to recordings with appreciable midbass and low-bass content, such as Mickey Hart's *Planet Drum* (CD, Rykodisc RCD 10206).

To comply with European Union regulations for electrical equipment, the Montis's subwoofer amplifier and the bias-voltage power supply for its electrostatic panel are put in standby mode after 30 minutes of no signal input. In standby mode, the power consumption is reduced to 1W, and it takes the speaker a second or two to wake up when you start to play music again. At first I found this delay disconcerting—it made me wonder if something was wrong—but eventually I got used

measurements, continued

set to "-8," which is how it measured flattest under these conditions. The woofer's level control doesn't affect the crossover to the panel but does boost the mid-bass; the green trace in fig.2, for example, shows the woofer's response with the level control set to "0."

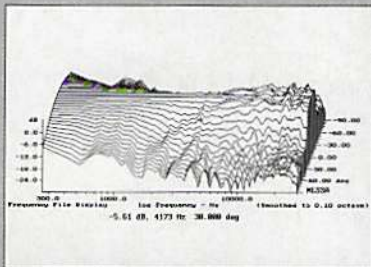


Fig.4 MartinLogan Montis, lateral response family at 50°, normalized to response on mid-panel axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

The level at 50Hz is 6dB greater than with the control set to "-8"—it is hard to conceive of a situation where a "+10" woofer setting will be necessary.

RD felt that the integration of the outputs of the electrostatic panel and active woofer was seamless. To further

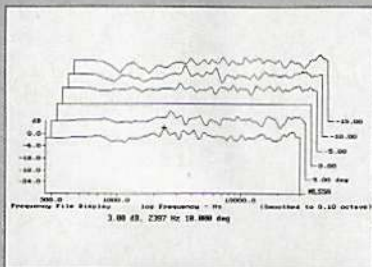


Fig.5 MartinLogan Montis, vertical response family at 50°, normalized to response on mid-panel axis, from back to front: differences in response 15-5° above axis, reference response, differences in response 5-10° below axis.

investigate the integration, which is always an issue with a design that combines lower- and upper-frequency sections with very different radiation patterns, I measured the Montises' spatially averaged response in my listening room, powering them with Classé CT-M600 amplifiers. (I perform this measurement by averaging twenty 1/6-octave-smoothed responses taken for each speaker individually in a rectangular grid measuring 36" by 18" and centered on the positions of my ears in my listening chair. I use a Metric Halo ULN-2 FireWire audio interface, in conjunction with SMUGSoftware's Fuzzmeasure 3.0 running on my Apple laptop.) I set the level of the powered woofer at "0" and you can see from fig.3 that the low frequencies are somewhat exaggerated, with broad peaks at 30Hz and 60Hz that are due to room modes

to it. An electrostatic's bias voltage is known to cause its panels to attract dust, which requires having to occasionally vacuum them clean. In addition to conserving power, the standby mode lets you go longer between cleanings. I *did* notice some warm-up effect—the speakers sounded a bit sluggish having just awakened from standby—but the effect was fairly small. I wouldn't worry about it in normal use, but if you're evaluating the Montis in a dealer's showroom, make sure it's been playing music for at least an hour. I was told that my review samples had been given considerable break-in at the factory, and noticed no break-in effect during the listening period.

Which amplifier?

The review samples of the Montis arrived while I was still working on my review of the PrimaLuna ProLogue Premium integrated amplifier, and though at \$2299 the Premium is not an amp that most people would think of using to drive a \$10,000 pair of speakers, I just had to hear how the combination would work.

Answer: surprisingly well, particularly when the ProLogue Premium had KT88 rather than EL34 output tubes installed, and I used its 8 ohm speaker terminals. (See my review at <http://tinyurl.com/7x9x7bs>.) The sound was well balanced from top to bottom, with just a bit of tube warmth. Some of the other amps I later tried with the Montises produced a more detailed and transparent sound, and the more powerful ones could certainly play louder without strain—but I could listen quite happily to the Premium-Montis combo without feeling deprived.

The other tube amp I had on hand was the Audiopax Model 88 Mk.II. The Audiopax driving the Avantgarde Uno speakers is a "magical" combination: detailed and transparent to the source while minimizing the "electronic" artifacts of the reproduction process. The Audiopax-Montis marriage was not a happy one. Although the Model 88 Mk.II's rated output is 30Wpc—not that much less than the ProLogue Premium's 40Wpc—the Audiopax was dynamically on the

subdued side even at moderate levels, and the sweetness and liquidity that had been so appealing with the Avantgardes now came across as too soft and lacking definition.

Next up was the Simaudio Moon Evolution W-7, a 150Wpc solid-state amp. The sound of the Montis driven by the Moon W-7 was vastly different from its sound with the PrimaLuna or the Audiopax. It now had dynamics in spades, evident as an ability to play much louder without strain, as well as more clearly present the ebb and flow of music at moderate levels. Bass was more extended and better controlled; the double-bass passages in Sylvia McNair's *Sure Thing: The Jerome Kern Songbook* (CD, Philips 442 129-2) were more distinct. But as good as the Moon-Montis pairing sounded, and with nothing specific that I could criticize, I kept wondering what the speakers would sound like with a really topnotch tube amp more powerful than either the PrimaLuna or the Audiopax.

Enter the 50th Anniversary Limited Edition of the McIntosh MC275, aka the MC275LE. This is the latest version of a tubed model that was first produced in 1961, earlier versions of which have been reviewed in *Stereophile* by Sam Tellig (July 2004, Vol.27 No.7) and Fred Kaplan (October 2010, Vol.33 No.10). The MC275LE is rated at 75Wpc, but reviews of earlier versions have indicated that this rating is very conservative; the amp is easily capable of putting out 90W or more before clipping. I'll discuss the MC275LE's sound in detail in my review (forthcoming); for now, I'll say that the Montis sounded best when driven by the MC275LE, the sound having all the dynamic power of the Moon Evolution W-7, combined with that harmonic "rightness" of tube amps that even the best solid-state amplifiers have difficulty achieving. The bass was very nearly as tight and extended as with the Simaudio, and better than with the other tube amps. (Interestingly, although the Montis has its own bass amplifier, the bass sounded different with each of these three amps.)

I had a hard time deciding whether I preferred the McIntosh's 8 or 4 ohm speaker terminals, a comparison compli-

measurements, continued

that have not been completely eliminated with the spatial averaging. There is a slight lack of energy in the upper bass and a little too much energy in the mid treble, but otherwise the MartinLogan's in-room response is respectably flat.

Fig.4 shows the Montis's lateral dispersion, normalized to the response on the mid-panel axis. The radiation pattern above 300Hz is basically that of a dipole, though MartinLogan's gracefully curved diaphragm does indeed widen the dispersion as intended. In the vertical plane (fig.5), there is very little change in response as you move above or below the middle of the panel.

Turning to the time domain, the MartinLogan's step response on the mid-panel axis (fig.6) shows a well-defined, time-coincident, right-triangle step from the panel, but with the woofer's output following about 1.7 milliseconds later. As with all

panel speakers, the Montis's cumulative spectral-decay plot (fig.7) appears to be very hashy, with multiple ridges of delayed energy. But as I have argued in the past, it's possible that, with a large panel, this graph is negatively affected by the multiple arrivals at the microphone—multiple arrivals that will be integrated by the ear-brain.

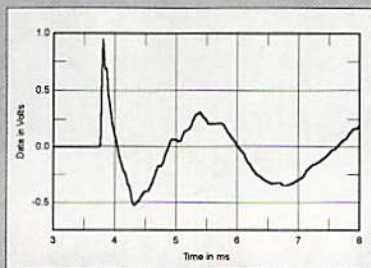


Fig.6 MartinLogan Montis, step response on mid-panel axis at 50° (5ms time window, 30kHz bandwidth).

As always with panel speakers, interpreting the MartinLogan Montis's measured behavior is tricky. But overall, the speaker measures as well as the larger Prodigy, which Larry Greenhill reviewed in July 2001, and with the extra flexibility offered by its woofer section being powered.—John Atkinson

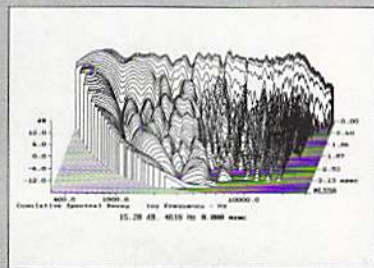


Fig.7 MartinLogan Montis, cumulative spectral-decay plot on mid-panel axis at 50° (0.15ms risetime).



The separation between the Montis's curved stators and diaphragm is maintained by spacers.

cated by the fact that the 8 ohm level was higher, which had to be compensated for by reducing the preamp level control. Finally I decided in favor of the 8 ohm terminals, which sounded more dynamic. I discussed the choice of output terminals with MartinLogan's Peter Soderberg, who has set up ML speakers in a variety of systems using tube amplifiers; he told me that, among those systems' owners, the preference was almost evenly split between the 4 and 8 ohm terminals, the latter being preferred a bit more often. In other words: Use whichever sounds better to you.

Sound

The most impressive characteristic of the MartinLogan Montis was its relative freedom from "speaker sound." A loudspeaker is a mechanical/electrical device whose every component part has the potential to superimpose on the signal resonances of its own, thus providing listeners with cues that they're listening to a speaker, not a musical instrument or a human voice. In a speaker with dynamic drive-units, you have the components of all the drivers (voice-coil, pole-piece, dustcap, spider, diaphragm, surround, frame, etc.), each adding its own resonances to the signal. Then, almost invariably, the drivers are placed in a box, which adds *its* resonances.

The designer can attempt to control these cabinet resonances by using low-resonance materials and damping the enclosure's interior, but it's a bit of a losing battle, and the result is often little more than the substitution of one set of resonances for another. Even the very best such speakers at times give audible indications that the sound is coming from a box.

The Montis did not. The electrostatic tweeter/midrange drive-unit—which, of course, has no box that can resonate—provided a transparent window on the sound, and whatever resonances were generated by the woofer enclosure were so well managed that I was never aware of them. And while I wouldn't go so far as to say that the electrostatic transducer had *no* sound of its own, the drum resonances of its stretched diaphragm were evidently distributed very effectively by the ClearSpar spacers, and were low enough in level that I was only occasionally aware of them.

As the late J. Gordon Holt pointed out many years ago, the most critical part of the audioband is the midrange. This is where the fundamentals of the human voice and most instruments lie; as long as a speaker reproduces the midrange accurately, our ears are relatively forgiving of faults at the frequency extremes. Midrange accuracy has long been recognized as a particular strength of electrostatics, and so

it was with the Montis. Voices had a very natural quality; it was easy for me to imagine that Liz Callaway was in my listening room, pouring her heart out as she sang "Make Someone Happy," from her *Passage of Time* (CD, PS Classics PS-984). Nor did the Montis shortchange male voices. My usual test tracks featuring Pavarotti, Sinatra, and Terfel were reproduced in a way that captured the unique quality of each voice, with no undue emphasis or weakness of chest resonances. The resolution of recorded detail was in the top class, without sounding etched or clinical.

I've always been attracted by the notion of a single-driver, crossoverless speaker; unfortunately, speakers of this sort have their own set of problems, which may include weaknesses in the treble *and* the bass. Most speaker designers have decided that the compromises involved in single-driver speakers are too great, and that a carefully managed crossover can yield better results. In the case of the Montis, the crossover frequency is nominally 340Hz, which means that reproduction from the lower midrange to the treble is handled by a single driver: a good thing, in that it provides coherence in this important part of the audioband. However, it also means that the crossover is smack in the middle of the range of the human voice, and a host of instruments such as the cello (see http://en.wikipedia.org/wiki/Musical_Acoustics). In my opinion, the greatest challenge—and a singular achievement of the Montis—is how this crossover is handled. Listening to Vincent Bélanger's cello (which I have not only heard live but, after a fashion, played myself; www.audiostream.com/content/it-live-or-it-mbl) on his album *Là* (CD, Fidelio Musique FACD032), I tried to identify points where the Montis's reproduction of the instrument's sound shifted from the electrostatic driver to the woofer, but had a hard time doing so—the transition seemed virtually seamless.

The most impressive characteristic of the MartinLogan Montis was its relative freedom from "speaker sound."

In terms of bass extension, it was clear from just casual listening that the Montis didn't lack in this department; more critical listening made me realize that the Montis was even better than I'd first thought. "Temple Caves," from Mickey Hart's *Planet Drum*, begins with a synthesizer note that separates the men from the boys: midsize floorstanding speakers that lack the benefit of a powered sub can only vaguely indicate the note, and small stand-mounted speakers omit its fundamental frequency entirely. Through the Montises, the synthesizer note was unambiguously present in a way that shook my room—perhaps only a touch less impressively in terms of power than through the Avantgarde Uno Nano and the GoldenEar Triton Two.

The bass drum in the Kyrie of Ariel Ramirez's *Misa Criolla*, conducted by José Luis Ocejó (CD, Philips 420 955-2), was reproduced with the proper weight and the requisite speed. What surprised me was the Montis's low-end extension, as indicated by the test tracks on Nordost's *System Set-Up & Tuning Disc* (CD, Nordost CD NOR 101). The Montis is specified as having low-end extension to 29Hz, -3dB, but this spec is evidently conservative. The output at 27Hz was about as strong as at 30 or 33Hz, and though the test tracks of 24, 21, and 18Hz showed the expected decline

in response, these tones were quite clean. There was even something at 18Hz—where the GoldenEar Triton Two, generally no slouch in bass reproduction, and specified as going down to 16Hz, had already given up. The Uno Nano's own powered sub, which has two 10" drivers in a larger enclosure than the MartinLogan's, is capable of much higher SPLs, but the Montis sub's capability proved well matched to the characteristics of the electrostatic driver.

A theory I tend to agree with is that a speaker's tonal character depends on the balance of its top and bottom ends. A speaker with extended, powerful bass must have a correspondingly extended treble response if it is not to sound dull. A speaker whose extended treble is not matched by a correspondingly extended bass will sound too bright. The Montis's impressive bass was matched by a scintillating but not overbright treble. The percussion instruments in track 3 of the *Chesky Records Jazz Sampler & Audiophile Test Compact Disc, Vol.1* (JD37) rang out with clarity, the cymbal having the proper shimmer and decaying very naturally.

The classic electrostatics had a reputation for sounding "polite," and were at their best with solo voice and piano, string quartets, jazz combos, etc.—not symphony orchestras, big bands, or rock. If you played dynamically demanding

I will be sorry to have to say goodbye to the review samples.

music, you had to be careful not to turn up the level too much or the speaker would start to sound distressed—and you could end up with a damaged electrostatic diaphragm. Those criticisms didn't apply to the Montis. I'm no head-

banger, but I like to play music loud on occasion, and I don't want my speakers to wimp out on me or break. And I admit that, like most audiophiles, I tend to play the system louder when I'm demonstrating it to visitors. Though not as effortless as the Avantgarde Uno Nano at high levels, the Montis rose to the challenge: As I turned up the volume, the music just got louder, with no indication of distress on the part of the speakers. How loud was that? Sitting in the listening chair and using the sound-level meter of the Audio Tools app for the iPhone 4, I held the phone before me, set the meter at C weighting, fast response, and played "Shiny Stockings," from Clark Terry and Frank Wess's *Big Band Basie* (CD, Reference RR-63CD), with the volume control of the CAT SL-1 Renaissance preamp set two notches above my usual setting. The highest SPL registered for this track was 103dB. The Audio Tools instructions point out that the iPhone's built-in mike clips above 100dB, so the actual level was probably higher. This is louder than I would want to listen to for very long—and I know that if I played the music at that level for visitors, they'd be asking me to turn it down.

At more moderate levels, the Montis distinguished itself by effectively communicating music's subtle ebb and flow. Track 7 of Bélanger's *Là* involves the interplay of cello and piano; the Montis (and the rest of the system) made it easy to follow the fine nuances of the playing of these gifted musicians.

The Montises were able to throw a soundstage that, depending on the recording, was wide, high, and deep, and a convincing impression of space. The imaging remained quite stable when I moved my head laterally—a benefit of the curvilinear line-source design. Where the Montis fell behind some other speakers I've had in my system was in the ability to produce pinpoint imaging. The imaging never sounded vague; it just lacked the



By almost any standard, the Montis is beautiful." —Robert Deutsch

specificity that I've experienced with, say, the GoldenEar Triton Twos, which I reviewed in the February 2012 issue. Playing the imaging-depth test on the *Chesky Jazz Sampler & Audiophile Test CD, Vol.2* (Chesky JD68), with the Triton Twos I could distinguish between clicks recorded at varying distances up to 70' from the microphone, whereas with the Montises there was good differentiation up to about 50'; the clicks recorded at distances beyond that sounded pretty much the same.

How important is the pinpoint definition of images in the soundstage? Arguably, not very. If you close your eyes at a concert, you may be surprised to find that the imaging isn't all that precise, resembling more what I heard from the Montises. Other than test material, very few recordings involve a mike-to-sound-source distance greater than 50'. The fact is that every speaker design involves a series of choices, and often trade-offs. A curvilinear line source makes for a design more forgiving of speaker and listening positions, the trade-off being a slight loss of imaging specificity and less-than-perfect layering of extreme depth. Some flat-panel electrostatics, like the Innersound Eros Mk.III, reviewed by Larry Greenhill in the May 2003 issue (www.stereophile.com/floorloudspeakers/819/index.html), may produce more precise, more holographic imaging, but the cost can be a sweet spot that, per LG, "seemed only millimeters in diameter." Taken as a whole, the MartinLogan Montis must be considered an outstanding success—but if hyperprecise imaging is at the top of your list of priorities, then it may not be the speaker for you.

Final Words

If ever there was a model to break down the negative stereotypes of electrostatic loudspeakers, it must be the MartinLogan Montis. With a small footprint, and taking up only a modest amount of visual space in the room, the Montis can be driven effectively by solid-state or tubed amplifier (including such modestly priced ones as PrimaLuna's ProLogue Premium integrated), has very good bass extension (courtesy its hybrid design), can be played quite loudly, and doesn't require you to listen with your head locked in a virtual vise. In the right system and with the right recordings, a pair of Montises can aurally transport you to the concert hall, or the musicians to your room.

After I'd written all of this review save these final words, nearly two weeks passed without my listening to the system. Turning it on again following my musical fast, I was struck by how natural, how un-hi-fi it sounded. The MartinLogan Montis really is a lovely loudspeaker: all the technology and precision that have gone into its manufacture work in the service of music. I will be sorry to have to say goodbye to the review samples. ■