

AUDIO REVIEW | Anthony H. Cordesman

The McIntosh LS360, CS350, and PS112 Multichannel Loudspeaker System

The McIntosh speaker line is a bit of a sleeper. If you simply look at the “boxes,” you see a nice product line with good wood finishes and pleasantly curved sides, but let’s be honest, they look more or less like a thousand other speakers. However, if you’re searching for a speaker that can handle massive amounts of power, deal with the loudest passages of home-theater sound, and still provide excellent stereo and multichannel music performance, you really should audition the McIntosh LS360 tower, smaller CS350 speaker, and PS112 subwoofer.

These speakers are not cheap (\$12,000 as tested), but then McIntosh has always been a prestige line. The LS360 tower sells for \$3500 (each), and the smaller CS350 LCR sells for \$2500, as does the PS112 subwoofer. I tested the LS360 tower as both the main left-right speakers in a 7.1-channel and 5.1-channel system and as paired stereo speakers, and the CS350 LCR as the center channel and as side- and rear-channel speakers in both a 7.1- and 5.1-channel configuration. I also tried them as stereo speakers. And I used the PS112 subwoofer in mul-

tichannel systems with both two and one subwoofers.

Top high-end speakers are getting cleaner and cleaner in the upper octaves, and the McIntoshs are a good case in point. The LS360 and CS350 LCRs have clean, detailed upper octaves, with excellent imaging and depth, and a stable sound field over a relatively wide listening area. They also have some of the cleanest upper octaves at high listening levels of any transducers I know of. This superior performance is at least in part attributable to the Bessel tweeter array used by both speakers.

Originally patented by Philips in 1983, Bessel arrays apply Bessel coefficients as weighting factors to individual speakers in a line to recreate the original point source of a single speaker. Of the various Bessel arrays, the five-element Bessel was chosen. It consists of a horizontal line of five equally spaced tweeters, 1-2-3-4-5, wired so that number 1 and number 5 are in series and number 2 tweeter is out-of-phase. The series-wired number 1 and number 5 tweeters are wired in parallel with tweeter numbers 2, 3, and 4. According to McIntosh, the end result is virtually the same polar pattern as a single



LS360

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tweeter over a relatively wide listening area. The normal comb-filter pattern of lobes does not occur, and it becomes possible to produce a wide, smooth dispersion of sound into the listening environment while distributing the input power over many voice coils.

All of the midrange and bass drivers in the LS360 and CS350 use what McIntosh calls LDHP (Low-Distortion High-Performance) technology. This involves a complex machining of the pole piece with one magnetic-field shorting-sleeve on either end. This construction results in symmetrical motor-drive force from the voice coil, and reduces lower intermodulation distortion products to below 3% at 100dB SPL, a significant improvement over many other drivers. In practice, this means that you can clearly hear the pitch changes of bass instruments in complex passages without any “one-note bass” col-

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oration. Since an 8" driver is used for both midrange and upper bass, it also reduces products that distort, “color,” or “muddy” the lower and middle voice ranges.

The LS360, the flagship of the line, is a truly excellent speaker for stereo listening, as well as for home-theater and multichannel listening. A ported, bass-reflex,



CS350

three-way design, it houses its three sets of drivers in a 50"-high tower cabinet. Rigid internal trusses using a unique arched bridge design inspired by ancient architecture restrict the vibration of the laminated cabinet sides, even when the speaker is driven to high volume. The use of non-parallel wall construction reduces standing waves, which sharpens the imaging of the custom drivers.

In addition to the Bessel tweeter array, McIntosh uses an 8" midrange driver with a 1.5"-diameter voice coil, in a shielded sub-

enclosure to isolate it from the rest of the system. The woofers consist of two dual-ported 10" drivers. Crossover occurs at 200Hz and 1500Hz, and circuit features protect the drivers.

The McIntosh CS350, which I used for surround speakers, is also a three-way system and is voice-matched to the LS360 (and

McIntosh really *does* voice-match its speakers far better than most manufacturers). The CS350 uses the same five-driver Bessel tweeter array as the LS360, one 4" midrange, and two 6.5" woofers. In spite of its diminutive size, it provides exceptionally high power-handling and acoustic output, and the lack of any bass hump means the CS350 can be placed in an in-wall enclosure, tilted to provide the best radiation pattern. Placed in the vertical position on speaker stands, it makes a very good stereo speaker indeed.

The PS112 is a relatively small powered subwoofer with a 400-watt McIntosh amplifier hardwired to a custom driver. The cabinet is exceptionally solid and uses the same extensive arched bridge internal cabinet trusses as the LS360, CS350, and other McIntosh speakers. It has a high-power, long-throw 12" woofer. The user can choose from a variety of crossover and level settings, and select either triggered hardware turn-on or automatic music-sensing turn-on.

McIntosh claims that a combination of the LS360, CS350, and PS112 speakers will easily deliver over 110dB of clean power in most average-sized rooms—a claim I

(briefly) confirmed. Few home-theater and multichannel music speakers I've reviewed since the Polk SRT have provided such clean sound at such high sound pressure levels, and the McIntoshs do so in an exceptionally small package. These are truly solid high-end products, and they really deliver.

Be aware, however, that the LS360 and CS350 are slightly warm by the standard of most competition. Audiophiles trained to listen for "flat" highs and treble detail—particularly the kind of aggressively unrealistic detail common in all too many of today's designs—may initially find them slightly rolled-off in the upper octaves and slightly dull. Similarly, if you only listen for bass power, rather than bass definition and bass detail, you may feel that the PS112 is simply one more subwoofer, and not realize how much

quicker, tighter, and more musically realistic it is than most of the competition.

Listen twice and listen long, and think hard about the sound of live music. These are very coherent speakers at low and mid-listening levels, but really crank them up and you realize they are also some of the clearest and cleanest speakers around. Like other top-quality speakers, they can be kicked up an extra 5dB or more simply because you don't hear the distortion products that alert you to high-power levels in lesser speakers. I suspect that you have no more interest in spending your life listening to the opening of *Saving Private Ryan* or the god-awful bass excess in the DTS logo opening than I do, but when this kind of sound happens, you want your investment to really pay off in terms of accuracy and transparency. The LS360, CS350, and the PS112 give you the clarity and transparency you pay for.

Let me also note in this regard that I began with the LS360s and a pair of PS112 subs to handle the bass because that's what McIntosh delivered. This amounts to glorious excess, although you do get the kind of incredible bass power of the very best theaters and concert venues, and better deep bass to the threshold of unlistenable volume levels and beyond than I've heard in "live" performances. However, the LS360 center channel is good enough that I wouldn't use a subwoofer for either stereo or multichannel *music* listening, unless you really want to burn out your ears on bass, syn-

thesizer, and guitar volumes that'll make your hearing die young. For concert-level music, the LS360 provides clean deep bass that is far better than some high-end speakers three or four times its size.

The CS350 center channel is a small monitor, better at 40Hz and above, but don't sell it short either. I tried it in both 5.1-channel and stereo systems, with and without the PS112 subwoofer. The home-theater and multichannel performance was excellent in the deep bass with the PS112. But the bass in stereo music was much better without the PS112 than I expected for a speaker of this size, and with the speaker mounted on stands and close to the wall, it's adequate even with most organ music, and excellent with any music that doesn't have truly exceptional low-bass content.

As for timbres and the "rolled-off highs," I should note that as a reviewer I prefer speakers with a bit more upper octave energy. From a real-world perspective, however, the frequency balance of the McIntosh LS360 and CS350 is much closer to live music than what has become audiophile and reviewer fashion in far too many circles.

If you go from concert listening to auditioning the LS360 and CS350, you're likely to find that their timbre with most recordings is quite a bit closer to what you heard live than the present fashion in audiophile fetishism. I also suspect you'll find them far more pleasant to listen to over time. Most detail-oriented high-end systems, as distinguished from natural music-oriented systems, are far more fatiguing to listen to. This is particularly true with really close or over-miked recordings and



PS112 Subwoofer

movies that are not re-equalized for home listening. (Which may explain the neurotic search on the part of many reviewers and audiophiles who are upper-octave-detail mad for the cable, component, or tweak that can somehow save them from themselves.)

If you also bring along a chamber music recording, soprano voice, or percussion with a lot of high-frequency detail, you'll find that the LS360 and CS350 do an excellent job of providing the upper octave information that should be in music. There were moments in stereo listening with the LS360 and CS350 when I was really stunned by their level of detail, not only in terms of music, but also in imaging, depth, and width.

As for home-theater and multi-channel music, the various configurations of the LS360 and CS350 I tried in 5.1- and 7.2-channel systems were equally pleasurable and revealing. I'm still waiting for the perfect DVD-A or SACD discs to recommend, and theatrical surround mixes that rise above the chestnuts we all know too well. In the interim, however, the McIntosh's midrange and treble performance was as natural, detailed, and well balanced as any

I've heard. Slightly warm, yes, but perfectly capable of revealing the relative upper-octave differences between the Pioneer DV-47A, Sony DVP-NS900, and Sony SCD-777ES in SACD playback.

The only caution I'd give is that some McIntosh engineers prefer more indirect rear and side channels. They would recommend two THX-certified McIntosh dipoles, the HT3F (in-wall flush) and HT3W (on wall). I don't agree, but I don't have your taste, ears, and listening room.

There's a lot of good competition out there and I would certainly want to hear as much of it as possible. If you do choose McIntosh, however, work closely with your McIntosh dealer, listen to the difference, and decide accordingly. Quite frankly, with gear this good and this natural, I don't see how you can go wrong simply trusting the McIntosh combination that best suits your ears and finances.



MANUFACTURER INFORMATION

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SPECIFICATIONS

LS360

Three-way bass reflex
Frequency response: 29Hz–20kHz; ±2dB
Power handling: 600 watts
Nominal impedance: 4 Ohms
Sensitivity: 88dB (1W/1m)
Driver Complement: 2 x 10", 1 x 8", 5 x 1"
Dimensions: 13.5" x 49.25" x 17.5"
Weight: 140 lbs.
Warranty (parts and labor): Five years
Price: \$3500 (each)

CS350

Three-way sealed design
Frequency response: 80Hz–20kHz, ±2dB
Power handling: 350 watts
Nominal impedance: 4 Ohms
Sensitivity: 86dB (1W/1m)
Driver Complement: Two 6.5", one 4", five 1"
Dimensions: 25.5" x 9" x 9.13"
Weight: 45 lbs.
Warranty (parts and labor): Five years
Price: \$2500 (each)

PS112 Subwoofer

Frequency response: 20–120Hz
Integral amplifier power: 400 watts
Driver complement: One 12"
Dimensions: 15" x 22.5" x 19"
Weight: 99 lbs.
Warranty (parts and labor): Five years
Price: \$2500 (each)



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