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**PRO
AUDIO
REVIEW**

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***“...WIDE BANDWIDTH...
LOW DISTORTION, GREAT IMAGING
AND UNCOLORED SOUND.”***



I was introduced to Paradigm a few years ago when Tom Bates organized a closefield monitor speaker evaluation session at Ambient Recording here in Stamford, Conn. Present were about six recording engineers as well as a few technical types. Over the course of a very, very long evening, some great Indian food and a few Indian beers, we listened to 22 pairs of speakers ranging in price from \$300 to \$5,000 per pair. What was a total surprise to me is how we all more or less agreed on which speakers we liked and disliked. The “bang-for-the-buck” prize unanimously went to a pair of Paradigms in the \$300 price range and also ranked in the top five or so overall regardless of price. Some of us commented that it would be nice to have a speaker this size a little more refined, self-powered and bi-amplified for studio monitoring. We communicated our wish list to the folks at Paradigm only to find out that they already had such a project underway.

I recently reported on the pair of prototypes used on my Duke Ellington project; as of this writing the Active/20's are a real product and in full production. Located in Toronto, Canada, Paradigm has been building speakers for the consumer market for the past 15 years. Much of its basic research comes from the Canadian government funded National Research Counsel (NRC), where studies were conducted to determine what makes a speaker sound good or bad. It should be no surprise

that smooth frequency response, especially across the mid band, came up high on the list. This is one of many important parameters that Paradigm has focused on over the years to help achieve a reputation for both quality and value.

“Bi-amping and electronic crossovers have distinct advantages over conventional single amp, passive designs.”

FEATURES

The Active/20 is a fully active, two-way, bi-amplified design with a built-in phase-optimized electronic crossover. The Active/20 uses a 6.5" mica-loaded polymer cone woofer and a 1" pure aluminum dome tweeter. A 110 W amplifier drives the woofer while a 50 W amp drives the tweeter. The crossover is third order electro-acoustic at 1.5 kHz and the rated frequency response is 48Hz-22kHz ± 1 dB, usable down to 35 Hz. In my room they are only a couple of dB down at 40 Hz. The front of the Active/20 has a rather handsome “P” for Paradigm logo on the bottom of the removable grill that has a two-color LED behind it. Normal on is green while red means you are getting close to clipping one of the amplifiers.

The back of the speaker has a large heat sink while below is a panel with both XLR balanced and RCA unbalanced inputs, a toggle switch to select between them, an input level control and both high- and low-frequency trim controls, with ± 4 dB for the low frequencies and ± 2 dB for high frequencies. All controls have center detents for +4 dB reference level and flat frequency calibration respectively. A switchable 80 Hz three-pole high pass filter allows for greater headroom when used with a subwoofer by rolling off the bottom two octaves. Power

is controlled by a two-position switch that has a "sleep mode" (drawing only a few mA while asleep) that turns the amplifier on when signal is applied, and an "always on" mode. Below the controls and switches is a rear firing port. The Active/20's measure 14"H x 8"W x 11"D and weigh in at a hefty 35 pounds each.

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IN USE

Paradigm was kind enough to send me 5 Active/20's as well as its Servo-15 subwoofer for a full 5.1 surround monitor set up for review (L,C,R, LS, RS & LFE). All five of the Active/20's are on Sound Anchor speaker stands approximately 30 inches off the floor putting the tweeters at ear height and all are at a distance from the listener of about seven feet. The Servo-15 subwoofer is on the floor between the left and center speaker. This sub has a built in 80 Hz low pass filter so when the 80 Hz high pass is switched on the Active/20's, the bass transition from sub to Active/20's is about as seamless as I have ever heard.

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When low frequencies come from both the satellite speakers and the subwoofer at the crossover point, strange phase abnormalities exist that can really mess with music. The Active/20/Servo-15 combo seems to overcome this problem.

At first I thought maybe I was just lucky with speaker location but I have since heard this set up in other locations with the same seamless results. Not only did the Servo-15 integrate well, it produced usable information down to 20 Hz. My experience with most subs has been of a not very well defined bass at the lower frequencies, but the Servo maintains definition even down to the very bottom. I could go on about how great this combination works for both 5.1 discrete and matrix surround mixing but let's take a look at a stereo pair of Active/20's set to full range with the high pass filter switched out.

The first and most obvious characteristic of the Active/20's is the lack of coloration. The frequency response is much flatter than just about any speaker that I know of, and the distortion is very low as well. Both of these attributes are due to the successful integration of a well-designed speaker system and electronics. In talking with Paradigm's engineers, I found out that they designed the basic system to be as flat as possible.

The pro market is full of powered speakers, but the Active/20 is the first speaker I have heard that uses amplifiers that are in the same league quality-wise as what I am accustomed to. Some active speakers have really crummy amps and so much EQ to correct for other problems in the system the side-effects of the correction are worse than the problem itself. There is a fine line between too much or just the right amount of EQ to correct for non-linearity problems. The final decision can only be made by extensive listening as well as advanced measurement techniques. At Paradigm's headquarters in Toronto, they have a 33,000 cu. ft. anechoic chamber, a double-blind screen listening room and a proprietary speaker measurement system. They also design and build all their own die-cast aluminum chassis drivers.

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It can be argued that specifications are not everything but I believe flat response is a necessary starting place for a good speaker, and in the mid-range where the ear is the most sensitive flat response is essential. Many two-way designs fall short in this area with crossover frequencies well above 3 kHz where woofer/midrange drivers become non-linear. It takes a serious tweeter to go as low as 1.5 kHz and maintain power handling and flat response out to 22 kHz. The tweeter in the Active/20 has a die-cast heatsink, one of the many advantages in building your own drivers. The 6.5" woofer/midrange driver has a die-cast frame with heatsink as well with an oversized magnet assembly and a stiff mica-loaded polymer cone.

The Active/20 is one of the few speakers I know of that actually sounds better with the grills on; there are at least two reasons for this. First, the grill frame is cut out to receive both drivers so the front of the grills are basically flush with the front edge of both drivers; this along with the beveled edge of the grill minimizes diffraction from the edge of the cabinet. Second, all measurements and final tweaking are done with the grills on.

The Active/20 has a twin sister that is a passive model called the Studio/20. She also sounds very good but lacks the finesse of her active sister.

"...great combination...for both 5.1 discrete and matrix surround."

SUMMARY

Powered speakers certainly make a lot of sense when you can optimize both speaker and amplifier to work in conjunction with one another. Bi-amping and electronic crossovers have distinct advantages over conventional single amp, passive designs. In my opinion, the main reason we do not see more good active systems is that the really great electronic designers are not great speaker designers and vice versa. It takes just the right chemistry between speaker and electronic designers to come up with a product that capitalizes on all the benefits of their respective specialties. The Active/20 is a result of this type of synergy with its wide bandwidth (especially for its size) low distortion, great imaging and uncolored sound. About the only thing I can pick at is a slight lack of dynamic capabilities – the Active/20's are able to play quite loud especially for a smallish speaker but it would be nice if the peaks could develop a bit more.