SECRETS HOME THEATER & AUDIO REVIEW
VAULT

Product Review

Polk Audio LC265*i*-IP Active (Built-in Amplifiers) In-Wall Speakers

Part I

November, 2006

Piero Gabucci

Specifications:

- Drivers: One 1" Tweeter, One 6.6" Midrange, One 6.5" Woofer
- Built-in Amplifiers: 200 Watts Total
- MFR: 20 Hz - 27 kHz
- Ethernet Ports
- Dimensions: 21" H x 8.5" W x 3" D
- Weight: 9 Pounds Each
- MSRP $2,899.98/Pair USA

Polk Audio
www.polkaudio.com

Introduction

I should have known I was in trouble early, when Paul DiComo, Polk Audio's Master Marketing Manager, e-mailed me with an offer to review a new in-wall speaker. I had the opportunity to review an entire in-wall speaker surround setup from Polk, namely their LC65i, in February of 2005. Back then I became a believer that in-walls could deliver a pretty good punch – both for home theater and for music.

This was a little different when he offered to deliver it himself from their headquarters in Baltimore a short jaunt down the Turnpike from me. My first question to him was, "What are we talking about?" After all, I had already placed five pre-built walls 2 ft wide x 8 ft tall from Paul in my modestly sized living room. How bad could it be? His response was, "I'll get back to you on that."

Paul arrived on a nice Saturday morning with a van; in it were two familiar full height walls with in-wall speakers already installed. Next came out what I'll refer to as the big black box on wheels. Removing the front and rear panel revealed a number of component pieces, most importantly was the Audio ReQuest music server, a power supply, and various NetStreams switchers and outlets, none of which are the subject of this review.

What Paul wanted me to spend time auditioning was in the 7 ft walls – the new LC265*i*-IP speaker, and because the system can handle multiple zones, he brought along another pair of Polk speakers called the Atrium 60, which look like substantial outdoor speakers, but more on them later. Of course the entire thing is meant to simulate a whole-house system, only without the house.

The System

Listening to these speakers isn't as simple as it sounds. There are three components brought together for you to hear anything. Polk partners with NetStreams and using their DigiLinx distribution system allows for a multi-room entertainment setup. The third component is the ReQuest music server with a significant hard drive. Since the amplifiers are built into the Polk speakers, other than switches and cables, no other equipment is necessary. If you want to bypass the ReQuest music server, the system allows for an outside source like a CD player.

All the control is done either through a NetStreams LCD touch screen controller which would typically be mounted on a wall or via your computer using the DigiLinx software. Other methods are possible, but more on that later too.

The LC265*i*-IP

Polk audio touts its new LC265i-IP as the "world's first" active IP addressable loudspeaker. Before I get to the uniqueness of this in-wall, let's get familiar with the construction. I will be referring to it as the 265. The unit is about 8" wide by 20" tall and is designed to fit in a typical wall stud construction at a bit over 3" deep, and weighs in at almost 9 lbs.

The 265 is a three-way design with a three-channel power amplifier built right into the back of the speaker. The amplifiers have a total of 200 watts, with 100 watts to the woofer, 75 watts to the midrange, and 25 watts to the tweeter. A 48V DC power supply is necessary to run the 265. For that, Polk has the SPS-1 unit, currently unavailable for this review, but it's expected to deliver the 4.0 amperes required by each 265, and in fact can deliver up to 40 amps.

None of drivers are new for the 265; in fact I recognize many of the same features I found in the LC65*i* last year. A quick look reveals the familiar swivel mounted 1" ring radiator tweeter, two 6 ½" polypropylene drivers, and the Polk "Power Port". The immediate similarities end there, flip the speaker over and the obvious addition is the amplifier.

An air-injected mineral-filled aerated polypropylene driver is said to be stiffer in cross-section. The softer interior provides damping, while the harder exterior provides stiffness. By lightening the structure of the Polk driver, it becomes quicker and therefore more detailed. The molded rubber outer surround is used to control those pesky "stray resonance waves" and deaden the results before they ever reach your ears.

The 1" tweeter can swivel up to 15 degrees, aiming towards the listening position.

The Polk Power Port is essentially an opening aiding the speaker to control turbulence which plays havoc with bass. The port facilitates a natural airflow and reduces distortion.

Innovation for these in-walls continues with the built-in DSP and seven-band parametric room EQ. Installing the software (Polk cleverly named it the "Performance Optimization Wizard") in your computer, Polk takes you through a series of questions for room adjustments (more about that later). Once you've completed the setup, save it, and the speakers will perform as instructed. Playing with various options allows you to store as many configurations as you'd like. This is especially important, because the server you use may actually have many rooms, and each can have its own setup. After that, your only options are to adjust bass, mid, and treble via the control pad, or computer.

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Atrium 60 Outdoor Speakers

What a surprise these little gems turned out to be, including giving them a ride with an Onix H6550 integrated tube amplifier. Sorry Paul, I needed to hear these from an analog source too.

The Atrium 60 speaker is from a series of all weather speakers from Polk, top of the line in fact. Housed in a sturdy black aluminum case (also available in white and if it must fit in with your décor it can be painted), the speaker is about 13" high, 8" across, and 9 inches deep. It comes with mounting brackets, luckily, because this unit is quite heavy.

The Atrium 60 is an 8 ohm speaker with an efficiency of 89 dB. Polk recommends amplification between 10-125 watts, and it has a frequency range from a low 50 Hz to a high 20 kHz.

Not unlike many of their current designs for speakers, the Atrium is fitted with a 6 ½" mid/woofer driver; yep the same "mineral-filled polypropylene cone and butyl rubber surround" unit. The highs are handled by a 1" metal coated dome tweeter. Consistent in the design is the patented Polk Power Port on the rear for controlling bass response. If by chance you're mounting the unit in an area where water will definitely cause some concern, the power port can be closed with an included plug.

Performance Enclosure

Not to beat the subject to death once again, but the inherent criticism of in-walls is controlling bass. Obviously placing open drivers into a wall cavity of building construction is a major concern for any speaker manufacturer. No company can predict with any consistency how their speaker will perform in your wall.

With some minor wood blocking over and below the speaker, a rudimentary speaker "enclosure" can be achieved. I would suggest, however, that spending this kind of money on performance oriented speakers requires a bit more planning.

Polk not only recognizes the problem but deals with the issue in a very proactive approach with their engineered Performance Enclosure (PE), an optional enclosure you can purchase with the in-walls.

The PE is actually quite a substantial piece of work fabricated from dense MDF. With various baffles and bracing, the end result of the speaker itself is a bit more predictable. Of course, if you're building new construction, installing the PE is easy, but if you're retrofitting and just cutting out some drywall, well it is a little more difficult. The PE will run you about $250 each from Polk.

NetStreams

NetStream's DigiLinX audio distribution system is an integral part of this package and should be mentioned. Absolutely a must is the NetStreams SN1000 IP card, and you'll need one ($400) per pair of speakers.

Using an Ethernet network and Cat-5 wiring, the system allows both digital and analog sources to work in a multi-room configuration. The advantages are of course endless from "remote diagnostics and maintenance" to working seamlessly with any web-browser controllers.

The size of your system can be small, such as a pair of speakers, to quite large multiple touchpad locations. I don't mean to suggest its limitations to only touch pads. Any component with an IP address, such as PCs, PDAs, etc. can be used to control the system.

What is most important however is NetStreams' commitment to the highest quality sound. For example uncompressed *.wav files up to 24-bit/96kHz can be distributed throughout the system.

Included for me was the 4" LCD touch screen device from NetStreams, the TL380. It controls source, location, music selection, volume control, etc. It can also be programmed to control lighting and other appliances – security cameras for example.

ReQuest Music Server

The third component to the system is the server itself, and Polk integrated the ReQuest Music server. The unit Polk Audio used in this setup is the F Series™ from ReQuest. Although it has a touch screen, it's likely the unit wouldn't be anywhere near easy access, most likely in an A/V closet. It's rather a shame, since the unit is very attractive. All black, save a centered silver logo plate. The unit can handle two zones, yet a four-zone server is available.

What it appears to be is a modified CD player. It's supplied with an extensive remote control almost like a miniature keyboard. Why? Because when it's encoding CDs, it recognizes 90%, the remaining CDs you'll have to manually input the album and song titles. If you're too lazy to do that, it will just enter the information as Artist 01 and song titles the same. A USB port on both the front and rear will allow a wireless keyboard.

The ReQuest can "serve" up lossless *.wav files, along with MP3 and FLAC recordings – hundreds and even thousands of them in fact depending on the unit you choose, CDs that is. This chart was taken from their website.

Model	WAV	FLAC	MP3 (320)	MP3 (192)	MP3 (128)
F4.800	800	1,600	3,750	6,250	9,375
F4.500	500	1,000	2,200	3,700	5,600
F2.800	800	1,600	3,750	6,250	9,375
F2.500	500	1,000	2,200	3,700	5,600
F2.250	250	500	1,175	1,950	2,950
*CD capacity will vary depending on length of CD's					

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Advantages of IP

Naturally, the potential of a multi-room system alone is a great reason for an IP addressable system. But Polk Audio recognizes the potential of such a device in audio terms – "signal fidelity" or signal degradation from remote amplifiers from long distances of speaker wires. A Cat-5e cable on the other hand delivers the signal to the amplifier on the speaker and only then converted to analog, considered "lossless fidelity".

Secondly, once that digital signal reaches the processor mounted on the speaker, bi- or tri-amplification is done more efficiently than from a processor - in the case of the 265, the base, midrange and treble receiving 100 watts, 75 watts, and 25 watts respectively.

Even an analog source is converted to digital to be processed by the DSP before converting back to analog. Although the user can control bass, midrange, and treble, the "DSP Engine" includes a seven-band parametric Equalizer.

I'm sure Polk Audio would be happy to supply the white paper on the whole discussion of the performance and design intent for the LC265i-IP speakers for those interested. In fact visit their extensive website; Polk Audio offers a substantial amount of information. I on the other hand just want to hear great music.

Setup

I will tell you the black box containing the control unit(s), which my son named the lunar module; should be located outside the listening area; the fan noise is actually disturbingly loud. As this is meant for a whole-house setup, it most definitely would end up in a closet anyway.

My listening space is actually quite small at 9' x 11', but challenging as Paul would say. The speaker walls were set on the short end, tight to the wall about 7' apart.

Traditional speaker wires aren't used here. The network and "COMM" cables are shielded Cat-5 with RJ-45 connectors.

I assume most consumers having this type of system would have it professionally installed. After all, a network decoder card and programming have to be accomplished. Paul was reluctant to admit that these speakers can actually be set up in an analog system. "With the newness, we just didn't want to mess up all the pre-programming done in Baltimore."

The Optimizing software was installed on my laptop and took me through some very basic questions, including room size and where their located in your space. It will ask for measurements off the side walls, distance between speakers, and distance off the floor measured to the tweeter, ceiling height, distance to sitting position, even the width and depth of the sitting position.

It will ask whether a Performance Enclosure is used, or if your room is oddly shaped. An interesting question is the type of room you have acoustically - is the room dead, neutral, or lively?

The DSP finally gives you an adjustment EQ setting for Bass – Mid – Treble.

A help menu is available and will answer basic questions. Just to relieve anxieties about the Optimizing software, the speaker comes with default factory settings.

Loading music into the server is simple because the ReQuest server loads like a CD player. The NetStreams control pad in hand, I can call up all that music.

Listening

I think my mind and ears were prepared to hear a very digital sound. After all, short of manually loading the CD into the music server, the amplification is digital, the transmission of sound through Cat-5 wires is digital, there was nothing analog from beginning until the very end. Surprisingly it was to the contrary. Is it politically correct in the audiophile world for me to say "Wow!" about in-walls?

Overall, what immediately surprised me was bass and plenty of it. Sitting about ten feet away, I felt it in my chest. Reviewing the specifications you'll notice that the 265 dips down to a low 20 Hz, and it's quite evident. I also found that the Polk unit had no trouble reaching delicate highs such as sweet violin strings.

Count Basie's *Straight Ahead* CD was thoroughly enjoyable – brass was brassy and brawn. On Track 3, "Lonely Street", the solo clarinet hung in mid-air, and I swear I felt the clarinet player raise and lower his instrument.

The 265s handled the *Tallis Scholars 25th Anniversary* CD amazingly - my small room could easily have been any grand high gothic cathedral - recessive at times, delicate and warm, forward and bold, creating a sense of space. I basked in the full range I was hearing.

Kelly Joe Phelps' *Tap the Red Cane Whirlwind* literally sounded new to me, considering how many times I've heard this guitar/vocal rich CD. I've never quite heard how thick he mutters as he plays his guitar, and the Polk LC265*i*-LP was quite revealing. Even the placement of his voice relative to the position of the guitar on his lap was astonishingly precise. Track 2 "Not so Far to Go" has a folksy-jazzy guitar introduction, and it completely dragged me into his performance – I could reach out and touch his guitar.

Rene Marie's scat version of "Bolero" on her CD *Live at Jazz Standards* leaves me spellbound and hearing it through the Polk in-walls is no exception. Her voice is warm and soothing and ever so feminine – the LC265s give her such richness and color.

Looking for the Downside

Perhaps it was more a room acoustic issue, but my early listening yielded some brightness in the mid to high range - I do believe my room was just a bit shy of ideal for the Polk 265s, and there may be a benefit to a larger room size. I was able to compensate for this in the Optimizing software.

On some recordings - and there didn't seem to exist any commonality - there is a "pop" between tracks. Other than odd and a bit annoying, it had no significant effect on my enjoyment.

Conclusions

If you sit back and think about speaker technology over the last 20 years, not much has changed. Certainly, active speakers are not new, but I think this new IP based technology is a dramatic swing. Whether it catches on or not is yet to be seen. Considering how mainstay whole house audio distribution systems have become, I don't see why Polk Audio's product wouldn't be incorporated into the scheme of things.

You'd be hard pressed to find an in-wall speaker that approaches audiophile quality, with tight deep bass, fluid and clean midrange, and airy and light highs. Polk comes pretty close with the LC265*i*-IP.

- Piero Gabucci -

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