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ELECTRONICALLY REPRINTED FROM APRIL 2017

TEST REPORT

Awesomeness Beyond Walls

By Darryl Wilkinson

RATING

Phase Technology dARTS DFS-660-T Speaker System

Performance ★★★★★

Build Quality ★★★★★

Value ★★★★★



Phase Technology dARTS DFS-660-T Speaker System

PRICE \$48,000 as reviewed

ONE DAY LAST SUMMER, I FOUND myself grumbling more than usual as I stood staring at 550 pounds of speakers and amps that Phase Technology had shipped to my house. (Actually, because the gravel road I live on is very unfriendly to tractor-trailers, I had to drive to the depot, load a couple of pallets of heavy boxes into two vehicles, drive home, and then unload it all.) The gear makes up the top-of-the-line version of the company's new, second-generation dARTS system. Unfortunately, dARTS is an unwieldy acronym. It stands for Digital Audio Reference Theater System, which

means you're being redundant if you call something a dARTS system. So from here on, I'm going to refer to it as a dARTS package. (At least dARTS is better than what we would have gotten from the name that the company had originally chosen for the lineup, Superior Home Audio Reference Theater System. Yes, sHARTS.)

The first dARTS packages came out in 2005, and I was fortunate enough to review one of the initial installs of the so-called 525 Custom



● The DFS-660-T tower incorporates a 1.125-inch tweeter and three 6.5-inch woofers.

THE VERDICT

When it comes to the evolution of loudspeakers, Phase Technology has an enviable pedigree filled with innovation. The company's newest dARTS speaker/amp package is a spectacular achievement that mitigates the effects of room acoustics and creates a highly theatrical, intensely musical experience that's extremely rare.

Box, a 5.1-channel system that cost \$17,500 (plus installation). Short version of the review: "If you can afford it, buy it." Obviously, dARTS packages aren't cheap. And the one under review here, a 72.4-channel package, will set you back more than two-and-a-half times that, at \$48,000 for just the hardware. (All dARTS systems are quoted as packages; individual elements are not sold separately.) In case the thought has crossed your mind that dARTS is a do-it-yourself kind of package, it isn't, so there'll be installation charges on top of that.

Speaking of installation, Ken Hecht, Phase Technology's VP of R&D, suspiciously got lost on the two-hour drive from the airport to my place in the woods and didn't arrive until after I'd unboxed the gear and set most of it up. In fact, I'd almost finished running the extra speaker wires. (Every speaker is either bi- or triamped, a situation I hadn't pre-wired my home theater for.) But he did arrive eventually, which was good because at that point I had no idea what to do with the amp-end of 23 sets of speaker wires and 13 RCA interconnects.

The whole idea that started Ken's 15-year-long odyssey of creating dARTS was to design and build a

AT A GLANCE

+ Plus

- **Audyssey MultEQ XT Pro room equalization**
- **Variable-axis soft-dome tweeters on surrounds**
- **All speakers are biamped or triamped**

- Minus

- **Expensive**
- **Status LEDs on amplifier are bright and can't be dimmed**
- **Requires professional installation**

loudspeaker system that would sound the same regardless of the room it was installed in. It took him two years of intense R&D to come up with a solution that sounded awesome, but it was complicated to install and calibrate. After being introduced to a new company called Audyssey and their core technology, MultEQ, Ken reluctantly scrapped what he'd done and signed up Phase Technology as one of the first manufacturers to incorporate MultEQ XT into its products.

SPEAKER SYSTEM

PHASE TECHNOLOGY DARTS DFS-660-T SPEAKER SYSTEM

PRICE: \$48,000 as reviewed (full 72.4 system including DFS-660-T (2); DFS-660-C; DCB660-SURR (2); DC-660-R (4); DCB-115 SUB (2); DP4000-IA controller/amp (2)) • **Phase Technology** • (855) 663-5600 • phasetech.com

It's About Time

Some readers may be familiar with MultEQ. It has been around for well over 10 years and has shown up in products from a variety of companies besides Phase Technology, including Denon, Marantz, Onkyo, McIntosh, NAD, and IMAX. For those who haven't got a clue about the who, what, or why of MultEQ, I can describe it in five words: It's a room equalization technology. Of course, that's like saying the USS *Nimitz* is a boat.

MultEQ was designed to solve the same problem that Ken was working on: eliminating (or at least minimizing) the distortion that's caused by sound reflecting off the various surfaces in the listening environment.

Sound bouncing off the walls, ceiling, floor, window treatments, and, heck, even extremely large animals is the most significant reason why speakers and subwoofers sound different in different rooms—and can even sound dramatically different when they're moved from one spot to another in the same room. A sub-woofer placed in a corner will sound noticeably louder than one in the center, away from any walls. There's more going on, however, than basic changes in frequency response. The multiple reflections off all those surfaces don't arrive at your ears at the same time. This gaggle of incoming reflected noises confuses your brain as it tries to figure out where the initial sounds came from. (It's like playing the Marco Polo game, only with a million Marco Polos.) Nor do these echoes arrive at every seat in the room at the same time, so your perception will change

depending on where you sit.

MultEQ is a clever approach to minimizing frequency and time delay issues. In general, it involves three main steps. First, a microphone measures the response in the room at multiple locations. Second, the MultEQ software crunches the numbers. Third, the program automatically creates equalization filters for each speaker. There are quite a few similar technologies that are used by other companies, with varying degrees of success. Like MultEQ, they typically offer different levels of resolution, require a differing number of measurements, or affect varying frequency ranges based on the available processing power in the hardware. MultEQ comes in four flavors that can handle three, six,

eight, or—in the case of the MultEQ XT Pro version used in the dARTS packages—up to 32 measurement positions. Audyssey says you start to get diminishing performance returns after 12 measurement points in most average-size rooms, and that's the number of measurements we took when it came time to calibrate this dARTS package. (That would be the package that I'd done

most of the work lugging, unpacking, and installing all by myself. Not that I'm bitter.)

Two for the Sound of One

There are two series within Phase Technology's new dARTS lineup: the 535 and the 660. The important difference between the two is the size of the room each system is designed for. Regardless of series,



● All speakers include removable black cloth grilles.



● Each face of the 660-SURR has a 1-inch tweeter and 6.5-inch woofer.

● The DCB-115 SUB uses two 15-inch cones.

TEST REPORT



every dARTS package is engineered to provide cinema reference level of 105

decibels SPL peak at the main listening seat. The 535 series is for rooms ranging from 2,500 to 8,000 cubic feet, depending on the form factor of the speakers used. The 660 series can nail that 105-dB SPL in rooms as “little” as 5,000 to 18,000 cubic feet. Within each series, there are several mini-series (or packages) that refer to basic variations of loudspeaker configurations. Both the 535 and 660 series have Freestanding, In-Wall, and Custom Box packages (the last for installation behind screens or cloth wall panels). The 660 series also includes a Tower package.

Even though my home theater is only a shoe or two more than 2,300 cubic feet, we decided to go for broke (figuratively and literally) and install a dARTS 660 Tower package that we modified for a 72.4 configuration. The speakers included the package’s DFS-660-T towers, DFS-660-C center, and, for the rear and back surrounds, 660-SURR on-walls (bipole/dipole switchable). To that, we added two pair of Phase Technology’s DC-660-R coaxial speakers, mounted in the ceiling for the front and rear height channels. Doubling down on the bass, the company swapped out the 660 Tower package’s 12-inch DFS-112 subwoofer and sent two 15-inch DCB-115 SUB units, which is an option for the 660 system.

dARTS Parts

Every dARTS package starts with Phase Technology’s DP4000-IA amplifier/controller. Because it’s outward functionality is strictly as a multichannel amp (the “controller” inside handles the factory-tuning, crossovers, and MultEQ XT Pro filters), it’s totally agnostic as far as which preamp/processor (or A/V receiver with requisite analog pre-outs) you use with it. I used the front end of an Onkyo TX-NR3030 AVR. Nor does it care which sound



● **A built-in 500-watt amp powers each of the DCB-115 SUB subwoofers.**

format you use, be it Dolby Atmos, DTS:X, or Dolby Pro Logic; all the surround processing takes place in your pre/pro. The only limitation is the number of available input channels, which is eight for each DP4000-IA (with your choice of XLR balanced or unbalanced RCA connections). This 72.4 Atmos configuration required a total of 12 input channels, including a shared LFE channel that fed both subwoofers through a Y-adaptor. So we used two DP4000-IAs.

The DP4000-IA is a beautiful 21-pound beast with a black brushed aluminum enclosure, auto on/off capability, and a 12-volt trigger input and output. Since most dARTS channels are biamped, there are actually 16 Class D switching amplifiers in the box, two for each channel input. Power output is rated at 125 watts per amp into 8 ohms (250 watts into 4 ohms); that’s power output to *each driver* (or driver grouping in the case of ganged mid/woofer pairs) in a biamped or triamped speaker (all-channels-driven performance is not specified). Along with the 16 speaker-level outputs, each DP4000-IA has a pair of line-level RCA subwoofer outs.

As noted, the speakers are biamped, with the exceptions being the center speaker, which is tri-amped, and the DCB-115 SUBs, which have their own built-in 500-watt amplifiers. Even the DC-660-R in-ceiling height speakers are biamped. Bi-/triamping the dARTS speakers using the amps in the DP4000-IA offers multiple, noticeable sonic benefits. **First of all, before any dARTS package leaves the factory, the company individually matches the system’s speakers and DP4000-IA to each other and adjusts the frequency response, crossover, and time alignment as necessary within the DP4000-IA’s firmware.** (That’s in addition to matching the individual drivers to the factory’s reference drivers.) The result is that each speaker matches the factory’s target response curve within an incredible ± 0.5 dB.

If Looks Could Kill

The DFS-660-T towers and the matching DFS-660-C center are visually striking, with their curved enclosures and highly polished

gloss-black finishes. The towers stand almost 4 feet tall (45.5 inches), with a 9-inch width and a 14.7-inch depth; true to the reference SPL output design of the dARTS 660 series, they’re obviously not meant for small rooms. (The center is a more accommodating 22 x 7.9 x 12.3 inches.) Each tower incorporates a new dARTS-specific 1.125-inch soft-dome tweeter, along with three 6.5-inch woofers that have triple-layer cones. The honey-combed center layer is made from Nomex, a material also used in fire-resistant clothing, and it’s sandwiched between two layers of glass-fiber material. This results in a cone that’s extremely light while being super-stiff—and, I suppose, it has the nice by-product of being able to survive a house fire.

The triamped DFS-660-C center has the same 1.125-inch soft-dome tweeter and two of the 6.5-inch triple-layer cone woofers. Each of the angled front baffles on the 660-SURR speakers sports a 1-inch soft-dome tweeter and a 5.25-inch triple-layer cone woofer. The quite substantial DCB-115 SUB incorporates dual 15-inch polypropylene cones, one active, one a passive radiator, and that aforementioned 500-watt rated amp in a cabinet that measures 15.25 x 19.5 x 22.4 inches. Unlike the towers and center speaker, the surrounds and sub have a textured, flat-black finish. It’s not ugly, just plain—and, truthfully, it’s not really noticeable on the surrounds since the front is covered by an angular grille.

I have one nit to pick with the cosmetics of the front speakers. The black-cloth grilles on the towers and center are certainly functional, but I think they’re a bit basic, especially considering the beautiful high-gloss finish on the cabinets—not to mention what you’d expect to see in a system at this price. In no way is it a deal-breaker, though.

Where Are My Words?

Regardless of its veracity, I like the saying that the native peoples of the Arctic have 100 words for snow (or some equally astonishing number). It’s fascinating to think

● **The attractive tower sports a curved enclosure and high-gloss finish.**

that something as simple as frozen water could be such an intimate part of the inhabitants’ lives that they’ve developed an almost instinctive ability to perceive so many differences that I’m sure must exist in snow. (Compare that with city dwellers to the south, who have, perhaps, four words for snow: clean, dirty, plowed, and yellow. Go farther south, and there’s only one word: WTF?) I imagine that nomadic peoples of the Sahara have their own extensive lexicon for sand. Transport a Saharan or Arctic resident from his home to the other locale, however, and the baffled newcomer would struggle to find the adjectives for the snow or sand he’d encounter.

Similarly, listening to this Phase Technology dARTS package had me struggling for words. It’s no ordinary speaker system. I can’t even call it extraordinary. Ultra-ordinary? No, still not there. There are no readily available phrases to describe the system’s uncanny ability to create an ecstatic acoustic experience in which all the physical aspects of speakers, amps, and room boundaries mysteriously dissipate into the ether, leaving only the essence of the music or the soundtrack to envelop you. I can’t decide whether the experience is terrifyingly sublime or sublimely terrifying.

Unleash the Beast!

Hands down, this is the most theatrical-scale loudspeaker system I’ve ever had the pleasure of reviewing. In fact, it’s the first system I’ve ever tested that seriously made me think my 110-inch Screen Innovations screen was too small. The feeling of comfortable containment that I’ve always had in my 12 x 24-foot home theater was suddenly gone. Watching an

over-the-top action film like *San Andreas* or *Batman v Superman: Dawn of Justice* was, frankly, a bit of an intimidating experience. (I can’t imagine enduring the beach landing scene in *Saving Private Ryan* with this system.) The dynamics were, well, unleashed, as if



● **The 660-SURR surround speaker has a textured flat finish.**

- The DP4000-IA combines sophisticated Audyssey-based room correction with 16 Class D amplifiers.



the movie was some wild animal, and it was made all the more ferocious by the pristine clarity of the audio. Meanwhile, the two DCB-115 SUBs absolutely pounded the room, as if a heavyweight boxer was training furiously on an unfortunate punching bag. True to MultEQ's promise, the tight bass response was not only deep, clean, and punchy as hell, but it sounded that way in every listening position.

Although similarly overwhelming and outlandish, *Mad Max: Fury Road*, in my opinion, makes much better use of Dolby Atmos. The dARTS speakers re-created the swirl of haunting voices around Max during the opening scene more coherently and more viscerally than I've ever heard before. The same can be said for the fight scene between Splinter and Shredder in the first *Teenage Mutant Ninja Turtles* movie. The swords and knives that flew through my room were so real that I worried I'd need stitches in my left ear after the movie was over. Fortunately, when I watched parts of the ceiling cave in on Raph, the chunks of rubble that seemed to fall from my own ceiling missed me. With the negative effects of the room's acoustics tamed, and with the extremely precise tuning and close-coupled amplification of the speaker drivers factored in, the system's performance became so neutral that it was about as close as it could get to porting the movie's soundtrack directly into my brain stem.

The neutrality and extreme dynamic capabilities of this dARTS setup enabled it to provide the best audio aspect of the professional movie theater: larger-than-life, voluminous sound. That was accompanied by the most compelling acoustic characteristics of the home theater:

intimacy, immediacy, and focus. *Unbroken* isn't a typical action/adventure movie, but there are action scenes in it. The dARTS package easily handled the sounds of flak and planes in the air, as well as planes crashing. It was also awesome at re-creating the more subtle Atmos effects, especially the overflight of the bomber as the POWs are standing in the river (near the end of the movie). More impressive, however, was the clarity of some of the more delicate details, such as the ding of the elevator bell at the restaurant in Tokyo. I was able to hear the natural decaying reverberation of the ding as it would have sounded in that open cafeteria (without any coloration added by my room), and it was so beautiful, it almost made me cry.

The Music Is the Milieu

The same elements that allow this system to be both highly theatrical and intensely intimate with movies make it an absolutely stunning system for music. I listened using stereo mode and also tried the Dolby Surround upconversion mode that makes use of the height channels. In plain stereo, the sound was simply phenomenal—and different. I often talk about how wide or deep a soundstage is when describing a system, but those terms don't apply in the usual way here. In a sense, there is no soundstage—or at least, no sense of the limitations of a soundstage as I'd normally think of them. For instance, when I listened to Anne Akiko Meyers play her 1697 Stradivarius ("Molitor") with the English Chamber Orchestra (*Air: The Bach Album*), it felt as if I was swimming in a sea of music—as if that was a totally natural milieu to exist within. Think of it as being akin

SPECS

DFS-660-T: 6.5 in glass-fiber/Nomex-honeycomb cone woofer (3), 1.125 in soft-dome tweeter (1); 9 x 45.5 x 14.7 in (WxHxD), 66 lb • **DFS-660-C:** 6.5 in glass-fiber/Nomex-honeycomb cone woofer (2), 1.125 in soft-dome tweeter (1); 22 x 7.9 x 12.3 in (WxHxD), 32 lb • **DCB660-SURR:** 5.25 in glass-fiber/Nomex-honeycomb cone woofer (2), 1 in soft-dome tweeter (2); 10.5 x 19.25 x 5 in (WxHxD), 24 lb • **DC-660-R:** 6.5 in glass-fiber/Nomex-honeycomb cone woofer (1), 1 in variable-axis soft-dome tweeter; 11.75 x 5.75 in (dia x D), 9 lb • **DCB-115 SUB:** 15 in polypropylene woofer (2); 500 watts RMS, sealed enclosure, line-level, RCA; 15.25 x 19.5 x 22.4 in (WxHxD), 87 lb • **DP4000-IA:** Number of Channels: 16; Rated Power (watts per channel): 125 into 8 ohms, 250 into 4 ohms (channels driven not specified); Specified Frequency Response: 20 Hz to 20 kHz; Dimensions (WxHxD, Inches): 17 x 5.625 x 17; Weight (Pounds): 21; Inputs: XLR (8), RCA (16); Outputs: Five-way binding posts (16), RCA (2); Additional: 12-volt input trigger (1), 12-volt output trigger (1), Setup microphone input (1)

to using in-ear monitors—except the music doesn't sound like it's coming from the middle of your head, and you don't have uncomfortable plugs in your ears. I got the same enveloping experience listening to the New Age/instrumental/classical/electronic tracks on Ludovico Einaudi's *Divenire* disc.

Of course, a lot depends on the recording and the type of music. Kid Rock's cover of "Feel Like Makin' Love," from his eponymous album, certainly didn't feel like a sea of serenity. In fact, it sounded more naked and raw—and more energized—than I've ever heard it before. In this case, the high-current musical image was self-contained rather than being constrained by the room. It seemed as if Kid Rock could've dropped the microphone and walked out the door any time he chose to. Ditto with the more or less frantic jazz tracks featuring Manu Katché's wonderful drumming on his own eponymous disc. The dARTS package was wonderfully able to make the music both tight and relaxed at the same time. I also have to say that the absolutely seamless integration of the subs into the system was so good that I never, ever, had one inkling of a sense that I was listening to a set of speakers rather than simply hearing music.

As good as the system sounded in stereo, it was even further enhanced in Dolby Surround. The same benefits of the room correction continued to apply, essentially removing the sensation of walls or the confinement of sound. But Dolby

Surround is so good at upconverting stereo music for multichannel—in large part because of the subtlety of the effect—that it almost made the system's two-channel-only performance seem flat by comparison.

Conclusion

Ten years ago, my conclusion regarding the first-generation dARTS 525 package I reviewed was: "If you can afford it, buy it." I need to amend that for this second-generation dARTS 660 package: "By all means, buy it if you can. But if you can't, figure out a way to beg, borrow, or steal it." Seriously, if you made a list of all the best sonic attributes you'd want in a speaker system, I'm sure you'd still be short on ways to give this dARTS package the accolades it deserves.

I'd like to say that, with no qualifications or caveats, this is the best speaker system I've ever had the good fortune to hear in a home environment. Yes, I'd like to say that, but I can't. The problem is that this dARTS package isn't a speaker system—it's an experience (and one hell of an experience, at that). In fact, it's unconditionally the best listening experience I've ever had in a home theater. Phase Technology already had an enviable pedigree with a history of innovation that was difficult to top. After listening to this dARTS 660 package, I think it's clear that the company's best days are yet to come. ♦