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Reviewed by
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Audio Research Corporation 150M.5 Multichannel Amplifier



FEATURES SNAPSHOT!

Description

Model: 150M.5 multichannel power amplifier

Price: \$7495 USD

Dimensions: 19"W x 7"H x 19.5"D

Weight: 64 pounds

Warranty: Three years parts and labor

Features

- Class-T digital-switching amplifier based on Tripath chip
- Modular design
- Configurable from one to seven channels
- Two modules can be bridged for up to 600Wpc into 8 ohms
- 12V remote trigger
- XLR balanced and RCA single-ended inputs
- Black or natural faceplate
- Rack-mount handles optional

When Audio Research Corporation (ARC) releases a new product, expectations are high. Now, after more than 30 years of building robust, reference-quality tube and solid-state electronics, ARC is taking aim at digital amplification, and currently offers three class-T models: the 300Wpc 300.2, the 150Wpc 150.2, and the subject of this review, the five-channel, 150Wpc 150M.5. Each employs, according to ARC, a more advanced version of the Tripath Digital Power Processor used in competing brands. And, like every ARC product, the 150M.5 is hand-built by ARC's skilled craftsmen in Plymouth, Minnesota.

It's all about bandwidth



According to ARC, digital amplifiers offer a more efficient means of delivering voltage and current to a loudspeaker. One of the first digital designs, termed class-D, never found its way into wide-bandwidth applications due to inherent distortion issues caused by the transistor's "imperfect" switching properties. Class-D amplification is largely used in subwoofers, where frequency response is restricted. Tripath Technologies, founded in 1995, developed class-T Digital Power Processing (DPP), which, they claim, combines class-D efficiency with more linear, wider-bandwidth frequency response.

Both class-D and class-T amplification track the incoming music signal and create a high-frequency analog of its audio waveform. This parallel signal is then used to switch an amplifier's output transistors on and off. In more conventional class-A and class-AB designs, the output transistors are constantly on, and electrical current passes through them regardless of the audio waveform's input level. The result is wasted energy, in the form of heat dissipated by the transistors. Digital-switching amplifiers turn transistors on only when the audio waveform requires it. Tripath's DPP improves on class-D by "learning the behavior of the output transistor" and "switching [the output transistors] with exactly the right timing to eliminate class-D distortion issues."



ARC hasn't just taken a Tripath chip, thrown it onto a printed circuit board, and christened it the 150M.5. According to David Gordon, ARC's manager of North American sales, it took more than a year of refinement to get the 150M.5's sound right. The chief challenge was to retain the fundamental sonic signature of classic ARC products in a class-T design. As in any high-quality audio device, the circuit topology and the power supply feeding it are crucial to the 150M.5's sonic integrity. The most critical aspect of the design is the low-pass filtering, which removes high-frequency noise produced by the switching transistors.

Introducing the ARC 150M.5

The 150M.5's impeccably assembled chassis is made of nonmagnetic aluminum and supported by five footers that look as if made of Sorbothane but are instead an "energy-absorbing elastomer that we [ARC] prefer sonically in this application." Customers can order a 150M with one to seven channels. Pairs of channels can also be bridged at the factory in a fully balanced differential configuration capable of producing 600Wpc into 8 ohms. All ARC products are available with a black or natural aluminum faceplate. Rack-mountable faceplates and the company's trademark handles are optional. My black, five-channel 150M.5 (\$7495 USD) came without handles.

ARC's reputation for long-lasting, conservatively built products is apparent in the 150M.5's solid but unadorned frame. Audiophiles used to mirror-finished 2" faceplates might wonder what they're paying for, but once they take a look inside, the answer will be clear. Each amplifier module is beautifully assembled and stuffed with top-quality parts from such companies as Wonder and Nichicon. The modules slide into individual slots and securely dock into heavy-gauge, gas-tight, multiple-pin connections. ARC chooses these connections for their "sound [quality] and reliability under high-current conditions."

Multichannel class-AB amplifiers I've auditioned have gotten by with 100,000 to 200,000 microfarads (μF) of capacitance. So with a more efficient class-T design, it might seem admissible, even logical, to save money with a less robust power supply. ARC doesn't think so. The 150M.5's massive power supply has a large EI power transformer with $312,000\mu\text{F}$ of capacitance -- enough, ARC states, to drive virtually any loudspeaker load and deliver rated power simultaneously into all installed channels. The company strongly recommends that the 150M.5 be plugged into a dedicated 20A line, and supplies a very-high-quality, 20A power cord to ensure that its circuits are never starved for power.

Setup

The 150M.5's high-quality parts allow for easy, dependable connections. The sturdy, well-spaced, all-metal, five-way binding posts were a joy to use. Each 7/16" hex head allowed me to use a socket wrench to comfortably secure large Analysis Plus T1 spade lugs.



I used the 150M.5's high-quality, single-ended RCA inputs. Balanced XLR connections are also supported, selectable via a small toggle switch. I didn't use the standard 12V remote turn-on -- for optimal performance, ARC recommends keeping the 150M.5 powered up continuously.

For those fearing their electric bill, the 150M.5's power consumption at idle is specified at a reasonable 100W.

After listening to the 150M.5 connected to my Shunyata Hydra power conditioner, I concluded that it sounded more dynamic and open plugged directly into my dedicated 20A wall outlet. And it didn't matter where I plugged in the ARC -- hum was never a problem.

Letting it all through

It didn't take long for me to figure out why ARC products are so successful. The 150M.5 was the most transparent, most musically satisfying multichannel amplifier I have ever heard. It did exactly what an audio component should: it let the sound through.

I watched at least a dozen films and listened to numerous CDs with the 150M.5, and was compelled to sit and listen without thinking about the hour or the quality of a recording. While flaws within recordings were revealed, they didn't ruin the experience. There was no fatigue from artificially extended highs, bloated lows, or forward mids. Nor was I bored by rolled-off highs, anemic lows, or a recessed midrange. The words that came frequently to mind were *natural*, *graceful*, and *powerful*.

I was riveted during the opening chapter of the underrated *Titan A.E.* This dynamic soundtrack sounded delightfully open and pure. The 150M.5 perfectly reproduced the crisp feel of the desert, the emptiness of space, and the sweet intensity of Graeme Revell's score. The immense size and weight of the *Titan* spaceship was palpable as Cale Tucker and his father, Professor Sam Tucker, narrowly escape the alien Drej (chapter 2). The 150M.5 did not embellish the sound -- whatever sweetness there was resided in the recording, while bass response wasn't just "rumble and thump." Low frequencies were full yet athletic and tight, and naturally extended to the mid frequencies without abnormal bloom.

Films I have watched many times sounded remixed. *Se7en*'s stellar sound design can sound harsh if playback is too aggressive, detached if the electronics are too laid-back. The 150M.5 was just right. New details within Ren Klyce's brilliant sonic collage of New York City were carried to the foreground. Voices had marvelous vibrancy and intelligibility. Plosives and sibilants, which reveal subtleties in dialogue, were not truncated or synthetically enhanced. Many amplifiers can barely reproduce California whispering "You got what you deserved" to the semiconscious Sloth (chapter 17) without adding edginess or dropping syllables. The 150M.5 separated John C. McGinley's subtle taunts from the noise floor and revealed the slithery contempt in the S.W.A.T. commander's voice. *Se7en* always gives me the chills. The 150M.5's outstanding resolution made the shivers reach even deeper.

Some amplifiers reproduce frequencies rigidly and mechanically, as if the sound is being created by the electronics rather than merely passing through them. I found nothing mechanical or clinical about the 150M.5's presentation. It possessed an effortless, bracingly dynamic disposition that sneaked up on me. The massive groan of the *Titanic*'s splintering hull (*Titanic*, chapter 27), and the *Arizona* succumbing to the concussive explosion of a Japanese bomb (*Pearl Harbor*, chapter 22), seemed to appear from nowhere. At one moment the 150M.5 was calmly reproducing ambience and dialogue; within the next millisecond, it was ripping the roof off.

Although multichannel amplifiers have shown notable recent improvement in terms of reproducing music, the 150M.5's formidable muscle and refinement were in a different league. The amp's sincerity, wide dynamics, and beautifully balanced soundstage made listening to classical orchestral music an absolute joy. The blazing horns of Saint-Saëns's Symphony 3 [Telarc CD-80274] can sound thin and strained; the 150M.5 kept its composure and managed to disclose this inclination while still conveying

the *soul* of the music in all its authentic, unedited glory.

Leonard Bernstein's *Candide Suite*, from the Minnesota Orchestra's *Showcase* [CD, Reference Recordings RR-907CD], scared me with its awesome dynamic swings. This is the way I expect to hear an orchestra: a room-filling soundstage delivered with wince-inducing yet silky-smooth transients. The 150M.5's command of detail captured the sweetness of string overtones, and bass harmonics rippled long after the initial stroke on a drum.

Listening to several cuts from Seal's newest DVD-A, *Seal IV* [Warner Bros. 47947], I heard a pitch-perfect presentation accompanied by splendid decay. This fabulous recording is rich in ambience, a touch of euphoria, and wonderfully supple vocals. All of these qualities were delivered through the ARC perfectly.

High frequencies were often so stunning that I couldn't help but smile. Percussion on Kodo's "Daraijin," from the multichannel SACD *Mondo Head* [Red Ink/Sony 56111], made its way around my room with seamless transparency. The sound was snappy, with no overhang or smearing of transients. Lightning-quick reflexes furnished the 150M.5 with superb rhythmic timing.

Older pop recordings, such as Erasure's classic "A Little Respect," from *The Innocents* [Sire 25730], never sounded so good. This track was nimble and intoxicatingly melodic. Andy Bell's distinct falsetto was full and textured, while Vince Clarke's layered synthesizers cast a solid, uniform image.

Who compares?

Prior to the ARC, I lived with the Conrad-Johnson MF5600 (\$4000, discontinued) and the Pass Labs X5 (\$4500) -- capable amplifiers with vastly different sonic characters. Although the X5 has excellent dynamics and very wide frequency response, its solid-state sound is a bit too cool, and less natural than the ARC's. Such stark transparency can be unkind to recordings of less than reference quality, making thin recordings sound harsh and inducing listening fatigue; the ARC, on the other hand, encouraged me to revisit average recordings that I'd left on the shelf for years.

Conrad-Johnson's MF5600 pulls me into music without much regard for its flaws, its powerful presentation combined with an optimistic, rose-colored view of recordings. A warm upper bass and a very euphoric midrange support high frequencies that are a tad rolled-off. And while lower bass is well controlled, the MF5600's overripe personality does tend to overload my medium-sized room.

By comparison, the ARC's character was defined by its utter lack of coloration and unrivaled ability to communicate the spirit of the music. Listening to it, I forgot about classifications and just got lost in the performance.

The build and parts qualities of the C-J and Pass are very good to excellent. In terms of overall fit'n'finish, the C-J is bit rough around the edges, while the Pass is a model of exacting industrial design. Although the C-J uses excellent parts, its point-to-point soldering is less tidy and well-finished. The X5's fastidious precision seems born of robots. The 150M.5's casework is exacting and very well finished, while its hand-assembled circuit layout is faultlessly symmetrical and skillfully constructed.

A tweak and a curtain call

Toward the end of my evaluation, ARC applied a hardware update to the 150M.5. David Gordon offered no details other than that it was a production change available on all class-T amplifiers and that it had to do with sonic quality.

A skeptic, I figured it would be nearly impossible for my human ears to notice a change.

I underestimated myself -- the difference I heard in my setup was subtle yet readily apparent. The 150M.5's already excellent transient response felt snappier, and its presentation tightened up. Its wide, deep soundstage benefited from more well-defined outlines and a more palpable texture.



The Audio Research Corporation's 150M.5 is a superb multichannel amplifier. It's also the best one that I've heard in my system. Consider my expectations *greatly* exceeded.

Review System

Speakers - Canton Ergo RC-A (mains), Ergo CM 500 DC (center), Ergo F (surrounds); Thiel CS2.4 (mains), MCS1 (center), Power Point (surrounds), SW1 (subwoofer)

Preamplifier - McCormack MAP 1

Source - Esoteric DV-50 universal audio/video player

Cables - Analysis Plus

Monitor - Mitsubishi WT-46809 rear-projection widescreen monitor (with Duvetyne modification and full ISF calibration)

Power Conditioning - Panamax, Shunyata Research

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