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Bulletin 0209

Product Overview

The Spectral DMA-360 Series 2 Reference Amplifier

The DMA-360 Reference is the original monaural reference amplifier from Spectral Audio. The DMA-360 Reference is also the most powerful high-speed amplifier ever developed for high-end music applications. An impressive array of engineering “firsts” in the DMA-360 culminate thirty years of high-speed fet design to produce the “ultimate” Spectral amplifier.

Spectral engineers pioneered the invention of high-speed fet audio amplifiers in the early 1980s with the wideband DMA-100 Class A instrumentation amplifier. From these innovative beginnings, Spectral has evolved increasingly powerful and sophisticated megahertz amplification for applications in the Spectral component system. Today these high-resolution amplifiers feature greater speed and settling capability combined with higher voltage and current than previously possible. The DMA-360 Monaural Reference is the ultimate realization of this quest to achieve uncompromising amplification true to the live musical experience.

From much listening and design experimentation, Spectral has consistently pursued component systems having ultra-fast settling, high-speed circuit architecture. These have invariably out-performed more traditional often cumbersome high-end design methods to achieve superlative detail, staging and listener

involvement. Indeed, test methodology simulating music waveforms and hearing acuity confirm that quickness of response and rapid signal extinction when reproducing complex dynamics are mandatory for accurate music reproduction. Only then can one preserve instantaneous waveform accuracy to prevent cover-up of delicate musical signals by previous events. Construction and performance of the Spectral DMA-360 Monaural Reference Amplifier for this demanding criterion and resulting sonic resolution are unmatched among contemporary high-end amplifier designs.

Unparalleled Resolution, Unprecedented Power

The very high-speed launch and enormous current reserve of the DMA-360 are possible with the use of Spectral’s proprietary “Focused Array” construction. This breakthrough topology aligns high-current vertical fet output devices for rapid, piston-like signal launch. The output section is comprised of eight individual V-fet amplifier modules paralleled to achieve a minimum 350 watt RMS output with 90 amp capability. With this “Focused Array” configuration of parallel fet amplifiers, full rated power is delivered with absolute load stability at an unprecedented 1 MHz. Output current is approximately double that of any previous high-speed amplifier design.

The “Focused Array” output section design of the DMA-360 makes possible the practical use of ultra-fast vertical fet devices for the first time in a high powered audio application. Each device, having vacuum tube like operating character, is energized from its own dedicated high energy storage capacitor, rectifier, and individually powered from an isolated ultra-low coupled transformer winding. Individual teflon bias trimmers calibrate each V-fet output device separately for maximum linearity and precise alignment. Groups of these individual powered output

sections utilize field folded RF type construction and electronic shielding to banish noise and eliminate low level propagation of stray interference. The resulting “Focused Array” of eight individually powered output sections performs as one with virtually no cross-coupling or energy storage artifacts reflecting between output devices. During extreme program dynamics, this arrangement can launch an instantaneous high-current drive of over 90 amps to the most sophisticated loudspeakers with unprecedented waveform tracing precision. Gone are performance damaging magnetic and electrical field propagation problems of conventional high-powered amplifier construction. Without stray radiation, critical small signal paths within the DMA-360 can perform with lowest possible distortion and settle to signal extinction in millionths of a second. Hence, the DMA-360 works with high power and great speed yet behaves inert to other electronic system components. Reproduction is extremely articulate and naturally resolving yet has all the powerful unlimited sonic character of the most brutal high power amplifier designs.

Proven Premium Discrete Circuitry

Small signal circuitry is based on Spectral’s proven discrete circuit multiple cascode double push-pull fet technology. Premium silicon array construction, similar to circuitry in the DMC-30 Reference Preamp, is applied to the DMA-360 to achieve enormous internal dynamic range capability. This reserve is linear class A with many times greater dynamic capability than program demands. It allows high current drive for quick controlled response from the very large output FET’s as well as isolation from their internal electronic activity. Unhindered by interferences and slow cumbersome response of conventional practice, these parts operate with unyielding control and exacting precision. Reproduction is clean, effortless and highly holographic. Intertransient silence is unrivaled by any other high-end amplifier.

Audio amplification paths through the DMA-360 are direct, inherently linear and simple. These minimalist configurations have always sounded and measured best but normally become ponderous and overburdened when protection and support functions are added. The DMA-360 takes a different route to solve

the sonic problems of protection circuitry. To maintain the pristine signal path, a sophisticated analog computing ancillary system is thermal and opto-coupled within the amplifier. This “hands off” operation management system observes device loading and power dissipation as well as speaker damaging out of range signals. It takes control without circuitous cross interfering connections to electronics in the signal path, leaving the musical signal pure and totally untouched.

A Superamp for Today's World

High-end flagship power amplifiers are commonly robust, conventional high power designs implemented with more premium parts and finished with impressive and even lavish metalwork. This Cadillac design approach traditionally favored by high-end designers views extreme power, luxury features and elaborate size and chassiswork as primary goals. At Spectral we acknowledge the role that robust design and high power capability can play in engineering ultimate performance amplifiers but consider this conventional approach insufficient to create a truly superior component for serious listening.

The Spectral DMA-360 has very little technically in common with other flagship power amplifiers and is fundamentally different. Its high-speed RF instrumentation design is virtually unique among today's high-end “super-amps” with the ability to deliver superior signal resolution and ultra high-speed power delivery which is unmatched by any other conventional amplifier. Until now, amplifiers could not offer both powerful speaker control, and the life-like sonic transparency possible only with high-speed, fast settling discrete circuitry. The DMA-360 defies the status quo, achieving extreme high power with the fastest most delicately detailed signal reproduction yet attained. This ultra-fast dynamic response and unique high-current capability allow the DMA-360 to demonstrate tremendous performance advantage over other large high-end amplifiers. Now that the traditional trade-off between sonic refinement and power is transcended, music enthusiasts need not compromise. The new DMA-360 Series 2 Monaural Reference is the ultimate Spectral amplifier revealing new levels of accuracy and realism from all of today’s finest loudspeakers.