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Product Overview

The Spectral DMA-250 Series 3 Reference Amplifier

Eighteen years ago Spectral introduced the original DMA-250 reference power amplifier. The high-speed, high-current DMA-250 was inspired by the revolution ary technology innovations and instrumention design of the Spectral DMA-180, our first high-current, wide band amplifier.The DMA-250 replicated the extreme signal response of the high power DMA-180 and was an immediate worldwide success, changing the way serious designers defined amplifier performance. Today, the new DMA-250 builds on the achievement of the original DMA-250 and illustrates Spectral's committment to state-of-the-art signal transparency and musical realism combined with exceptional value.

As the foundation of the Spectral amplifier family, the DMA-250 S3 represents striking progress in the development of an ideal power amplifier for high performance music systems. Drawing on the many design advances developed for Spectral's ambitious DMA-300 and DMA-280 reference amplifiers, the performance and technology of the DMA-250 are fundamentally superior to that of conventional SS and tube power amplifiers, achieving significantly lower distortion levels and radically faster signal response.

The uncompromising high-speed amplifier topology of our DMA-280 Reference Amplifier forms the basis for the remarkable DMA-250. This new generation topology features innovative input, gain and output driver stages based on a new family of premium discrete silicon devices. The pure class A driver and gain sections now operate up to ten times faster than previous Spectral designs and offer dramatic improvment in transient resolution and an ultra-low noise floor. Amplifier settling and recovery are perfect. The result is immersive sonics of extraordinary purity and detail which emerge from an absolutely uncompressed soundfield, free of artifact or fatigue.

From much listening and design experimentation, Spectral has consistently pioneered component systems having fast settling, high-speed circuit architecture. These have invariably outperformed more traditional often cumbersome high-end design methods to achieve superlative detail, soundstaging 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-250 S3 Reference Amplifier for this demanding criterion and resulting sonic resolution are unmatched among contemporary high-end amplifier designs.

Unparalleled Resolution, Unprecedented Control

The very high-speed launch and high current reserves of the new DMA-250 are achieved with the use of Spectral's proprietary "Focused Array" construction. Our breakthrough topology time aligns high-current vertical fet output devices for rapid, pistonic signal launch. The output section is comprised of eight individual V-fet amplifier modules paralleled to achieve a minimum 200 watt RMS / per channel with 60 amp capability. With this "Focused Array" arrangement of

parallel fet amplifiers, full rated power is delivered with total load stability at an unprecedented 1 MHz.

Like the renowned DMA-280 Reference Amplifier, the DMA-250 utilizes Spectral's unique "Focused Array" output section design with powerful ultra-fast Mega Fet devices. 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 are used to calibrate each output device separately. Groups of these individual output device / power supply circuits utilize field folding construction and electronic shielding to further impede propagation of stray interference. The resulting "Focused Array" of individual isolated output sections performs as one with virtually no cross-coupling and energy storage artifacts reflecting between output devices. During extreme program dynamics, this arrangement can launch an instantaneous high current drive of over 60 amps per channel to the most sophisticated loudspeakers with assured precision waveform tracing. Gone are performance damaging magnetic and electrical field propagation problems of conventional multiple device power amplifiers. Without stray radiation, critical small signal paths within the DMA-250 and other sound system components can perform with lowest possible distortion and settle to signal extinction in microseconds. Hence, the DMA-250 works with power and speed yet behaves inert to other electronic parts of the system. Reproduction is highly articulate and resolving yet has all the powerful unlimited character of the finest very high power amplifier designs due to its superb overload and ultra-fast recovery characteristics.

Ultra Premium Discrete High Speed 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 DMA-280 Reference Amplifier, is applied to the DMA-250 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 absolutely pure, effortless and highly focused and holographic.

Audio amplification paths through the DMA-250 are direct, inherently linear and simple. These minimalist configurations have always sounded and measured the best but normally become ponderous and overburdened when protection and support functions are added. The DMA-250 takes a different route to solve the sonic problems of amplifier 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" operational 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 absolutely pure and totally untouched.

The Reference Amplifier for the Rest of Us

For the serious music enthusiast, the DMA-250 S3 Reference Amplifier is a 'game changer' just as its revolutionary predecessors have been. With its extreme ultra-low distortion and extraordinary signal response courtesy of the benchmark DMA-280, the DMA-250 sets a very high standard indeed. Today's DMA-250 distills the essence of what Spectral engineers have discovered over decades of painstaking engineering research in the pursuit of ultimate amplifier design. The DMA-250 is also eloquent proof that state-of-the-art performance and ultimate refinement need not cost a kings ransom. Although of reasonable cost, the DMA-250 offers uncompromising sonic sophistication and drive precision for the most critical of music system applications. The DMA-250 S3 is the reference amplifier for the rest of us.