

# THE BEST OF CLASS AB



# OTH WORLDS CLASS A



# IF YOU CAN'T AFFORD

Welcome to the world of SUMO audio components. From its beginning, SUMO Electric Company Ltd. has been dedicated to bringing the widest possible variety of audio equipment — equipment that sacrifices nothing in the way of quality or performance — to the audiophile community. We have also endeavored to provide the lowest possible pricing that still allows us to achieve these goals.

It is true that SUMO has made some very expensive products in the last few years. Yet those designs provided us with the expertise to improve at the same time economize our components without compromising their performance, appearance, or reliability in any way. The current line of SUMO products offers nothing less than state-of-the-art performance. The difference between SUMO and its competition who also manufacture excellent equipment: **you can afford us.**

The first of SUMO's new products is the Model **NINE** pure class A stereo power amplifier. Far from being "just another class A amp," the entire design of the NINE is so unique it has been awarded U.S. Patent #4229706. This 70-Watt-per-channel miracle is ideal for the connoisseur with efficient or electrostatic loudspeakers, or as the midrange and/or high-frequency power source in a multi-amp system.

Larger listening rooms and inefficient loudspeakers often demand more power than the Model NINE can provide, and to satisfy them SUMO offers the new **ANDROMEDA** class AB stereo power amplifier. ANDROMEDA is quite conservatively rated at 200 Watts per channel (into 8 Ohms) and is a thorough redesign of our earlier "Half-Power." Taking advantage of the packaging techniques of the Model NINE, the result is an amp of equal or better performance than the "Half-Power" at half its original price. Since the gain/phase characteristics of ANDROMEDA are identical to the Model NINE, ANDROMEDA makes a perfect match as a bottom-end or subwoofer amplifier to the NINE's upper range in a multi-amp system.

It is with great pride that SUMO debuts its **ELECTRA** preamplifier and "CHARLIE" the tuner. The design of ELECTRA was based upon the realization that, although one could spend two thousand dollars or more on a preamplifier all one gets for that excessive expenditure is a few hundred dollars

## CHARLIE

**The Problem:** Why is it that, despite specifications which indicate distortion products of only a few hundredths of a percent, ruler-flat frequency response, and exacting tuning accuracy, virtually all currently available FM tuners do not match those specifications with equivalent quality of sound.

**The Solution:** SUMO's new audiophile quality "CHARLIE" the tuner. CHARLIE delivers what you have never heard from an FM tuner before — clear, clean, crisp, dynamic, state-of-the-art sound quality.

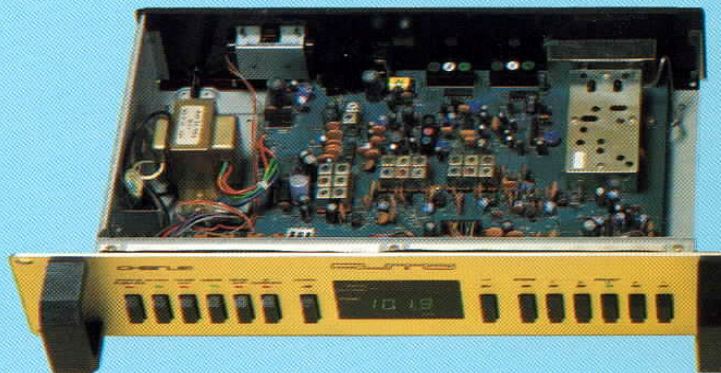
The sound quality of CHARLIE has, admittedly, been matched once before — by the superb but astronomically expensive \$4,500 Sequerra. We don't mind mentioning it. We do it deliberately in the hope that you will compare the two. We think your eyes and ears will be opened.

CHARLIE's stupendous sound comes not from attempting to improve older designs but from a fresh new way of thinking. Separation and de-emphasis adjustments are made independently from the multiplex, resulting in greatly improved stereo separation. All distortion products are restricted to the simple second and third order all the way to 15KHz — measured in either stereo or mono.

**The Happy Ending:** A tuner of CHARLIE's virtuosity, beauty and sonic supremacy sounds very expensive. So, as you listen to the unprecedented detail and definition, to the clarity and openness of CHARLIE, listen to something else — the price. And that should solve your tuner problems happily ever after.

### Performance Specifications:

	Mono	Stereo
Usable Sensitivity (I.H.F.)	2.5µV	4µV
Quieting Sensitivity (S/N = 50dB)	3.7µV	40µV
Ultimate S/N Ratio (65dBf, 98MHz)	80dB	74dB
Distortion (65dBf, 98MHz)	Wide Narrow	1KHz - .04% 1KHz - .10%
Capture Ratio (65dBf)		1dB
Alternate Channel Selectivity	Wide Narrow	65dB 100dB
AM Suppression (65dBf)		60dB
Frequency Response (30Hz - 15KHz)		+1dB, -25dB
Subcarrier (38KHz) Rejection		80dB
Separation (65dBf-98MHz)		100Hz-45dB, 1KHz-50dB, 10KHz-45dB, 15KHz-40dB
Dimensions (W x H x D)		19" x 3.5" x 9" (48.5cm x 9cm x 23cm)
Shipping Weight		13 lbs (6Kg)



### Features:

- BLEND — reduces noise by combining high frequencies of both channels.
- FILTER — maintains phase integrity in MONO above 15KHz.
- MONO — forces monaural operation when stereo reception is unacceptable (too weak or too noisy)
- MUTE — dual function; automatically rejects all signals below interstation noise above that level.
- IF NARROW — employs unique shaping filter network which insures selectivity without sacrificing fidelity of reception (common trade among other tuners).
- UP and DOWN tuning with single step and express search mode
- STORE and PRESET allow to program 5 of your favorite stations in nonvolatile memory.
- Quartz controlled digitally synthesized LED readout. (4 element display)
- Precise 5 element LED SIGNAL STRENGTH indicator allows you to determine relative signal strength of the tuned in station.
- Precise 5 element LED MULTIPATH indicator allows you to determine relative amount of multipath distortion and possibly reorient the antenna for best reception.

## THE NINE

The NINE is a 70 Watts per channel pure class A power amplifier with extraordinary sonic performance, available to dedicated audiophiles.

Pure class A amplification has long been recognized as an ideal in state-of-the-art amplifier design. The sonic accuracy of class A is the consequence of operating in the linear transfer function region with resultant wide bandwidth and phase integrity. The NINE is a radically different design which achieves the acknowledged superiority of pure class A operation thanks to the unique auto-biasing topology developed by James Bongiorno (U.S. Patent No. 4229706).

Its simplicity combined with up-to-the-moment technology results in the following cost saving factors:

- Thermal tracking circuitry, conventional bias circuitry and protection circuitry are not required.
- Driver and pre-driver stages are not necessary.

The benefits to an audiophile are many fold: unchallenged sonic excellence and fidelity of pure class A operation into all loads, inherent temperature stabilization which makes thermal runaway impossible, safety for associated loudspeaker systems if operated within their power handling limits, reliability for years of trouble-free performance.

## ANDROMEDA

ANDROMEDA is a 200 Watts per channel class AB power amplifier that goes beyond the performance and sonic standards offered by any other among credible audio manufacturers.

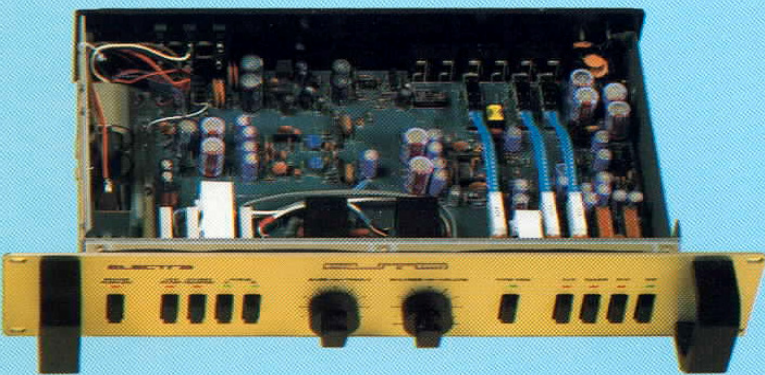
It has been known that the performance of an amplifier is strictly dependent upon the loudspeaker that it is driving. Most loudspeakers act like motors and are capable of tremendous reverse energy feedback, greater at the low frequencies and must be controlled by an amp at all times. This ideal control characteristic existing at all times has been realized through development of new concept of fully balanced bridge operation (not to be confused with simple bridging or strapping). It utilizes a full-wave four quadrant differential balanced bridge topology that employs four independent push-pull feedback loops from each side of the loudspeaker at all times. It is a step beyond what fully complementary-symmetry push-pull amplifiers can do; it guarantees perfect symmetry of positive and negative cycles or in phase and out of phase signals. The resulting contrast maintained over the loudspeakers is truly awesome and must be experienced to be appreciated.

# YOU CAN'T ENJOY IT!

worth of preamplifier circuitry and the idea that some mysterious but very expensive process has made the purchase worthwhile. SUMO's ELECTRA reveals that the only mystery in preamplifiers is why anyone will continue to spend more than \$400 for one. ELECTRA's list of features includes a completely discrete, fully-complementary pre-preamp with enough gain to accommodate any and all moving-coil cartridges, and yet has a high enough overload margin for any conceivable recording situation (bring on the digitals!); an absolutely D.C.-coupled (no input capacitors) differential FET phono stage with high gain, high overload margin, and low noise; a line amp stage with essentially infinite overload capability; tone controls which automatically defeat themselves in flat position; and a quasi-second-order (20 Hz) low filter. In addition, the entire preamplifier remains in phase from input to output.

CHARLIE, an FM synthesized digital tuner, is another dimension in FM tuner design. Tuners have traditionally been designed to perform miracles on test benches despite the sad fact that the greatest limitation in the tuners is the quality of the broadcast signal itself. SUMO decided that the greatest emphasis in the design of CHARLIE should be placed in an area that, until now, has been almost completely ignored. This area is Sound Quality. While the competition continues to make incredibly expensive tuners that, for all that expense, still manage to sound unsatisfactory, SUMO has taken great care to design what we believe is the best audio portion (detector, multiplex, etc.) on the market. Naturally, CHARLIE's specifications compare with those of any excellent tuner, but you will hear something from CHARLIE that you haven't heard from a tuner before: clear sound. And you can afford it.

We at SUMO sincerely hope that those of you who thought that only unattainably expensive equipment could produce state-of-the-art sound have at least been inclined to think again. All SUMO products use the highest quality parts and metalwork, and will please the most discriminating eye as well as ear. In the past you may have felt that, if you can't afford it, you can't enjoy it. Now, with SUMO, you can do both.



## Features:

- Built in MC pre-amplifier circuit with fully complementary topology.
- Switchable low-filter circuit.
- Program switching at inputs for ultra low noise, crosstalk and hum pick-up susceptibility.
- Full function mode switching - STEREO, MONO, A, B, A+B.
- Precision laser trimmed stepped volume control.
- Precision laser trimmed stepped bass and treble controls located in the feedback loop of line amplifier automatically bypassed at flat position.
- Precision laser trimmed center detent balance control.
- Tape monitor facilities.
- All 1% metal film resistors in audio circuits.
- All 2% polypropylene and polystyrene capacitors in RIAA, tone and filter circuits.
- Relay muting in both MAIN OUT and TAPE OUT.
- DC inputs in PHONO and LINE stages through application of differential FET transistors.
- Fully regulated power supplies throughout.
- Gold plated MC and MM input jacks.
- Double action switching for extended reliability.

## Performance Specifications:

	The NINE	ANDROMEDA
Power Output in Watts RMS per channel 20Hz-20KHz	@ 8 Ohms: 70 @ less than 0.25% H. Dist. @ 4 Ohms: 120 @ less than 1% H. Dist.	@ 8 Ohms: 200 @ less than 0.05% H. Dist. @ 4 Ohms: 375 @ less than 0.1% H. Dist.
Total Harmonic, IM, and TIM Distortions from 0.25 Watts to rated output at 8 Ohms	Harmonic: 0.05% IM: 0.05% TIM: None	Harmonic: 0.05% IM: 0.05% TIM: None
Hum & Noise below rated power	100dB	100dB
Frequency Response	±0.1dB from 20Hz to 20kHz	±0.1dB from 20Hz to 20kHz
Input Sensitivity for Rated Output	1.1V/RMS	1.8V/RMS
Input Impedance	1MOhm	100KOhms
Damping Factor	150 from 20Hz to 1kHz	300 from 20Hz to 1kHz
Rise Time	3 microseconds	2 microseconds
Dimensions (W x H x D)	19" x 8 3/4" x 7" (48cm x 22cm x 18cm)	19 x 8 3/4" x 7" (48cm x 22cm x 18cm)
Shipping Weight	35 lbs (16kg)	35 lbs (16kg)

\*Specifications subject to change without notice.

## ELECTRA

It should not be a mystery how a top-quality preamplifier comes to be made. Unfortunately, most manufacturers would like you to believe that the circuit design of their preamps is as mysterious and inexplicable as the origin of the universe. SUMO feels that this attitude is merely a way for these manufacturers to justify an exorbitant price tag. It is also a way to keep the potential customer from inquiring too deeply into design.

SUMO cordially invites you to take a good close look at ELECTRA. Behind the anodized brushed aluminum-alloy front panel you will find such unique features as D.C. coupled differential FET phono stage (notice the absence of input coupling capacitors). Note the fully complementary pre-preamp for moving coil cartridges. You will see that the entire preamplifier is in phase from input to output. Observe how different the circuit topology is from the traditional preamplifier. SUMO has found a way to incorporate these innovative features into an attractive, affordable component with state-of-the-art (we do not use the term casually) sound quality. What's the secret? Years of "on the bench," in the home, hands on, ears open, scientific experience.

Listening to ELECTRA will reveal the success of such an exhaustive engineering process. Compare ELECTRA's sound and features to any other preamp made at any price. Then compare prices. Surprised?

It's no mystery. It's SUMO.

## Performance Specifications:

Input Functions	Gain 1000Hz	Sensitivity 3V RMS-1KHz	Noise* 20-20KHz	S/N Ratio Below 3V	THD and Below 3V
MC (Phono 1)	64dB	115µV	65nV	65dB	0.01%
MM (Phono 2)	42dB	2.3mV	0.65µV	70dB	0.01%
TUNER, AUX, TAPE	21dB	315mV	2.7uV	100dB	0.01%
Frequency Response	20Hz-20KHz 2Hz-100KHz			± 0.1dB ± 3dB	
Low Filter (Quasi 2nd Order)	20Hz			-3dB	
RIAA Deviation MC (Phono 1)	20Hz-20KHz			± 0.5dB	
MM (Phono 2)	20Hz-20KHz			± 0.4dB	
Crosstalk	20KHz 1KHz and below			-50dB or better -80dB or better	
Dimensions (W x H x D)	19" x 3.5" x 9" (48.5cm x 9cm x 23cm)				
Shipping Weight	13 lbs (6kg)				

\*Referred to input.

All derived at 3 Volts output into 5KOhm load except Tape which is driven into a 10KOhm load.

## SUMO ELECTRIC CO., LTD.

The driving force behind our efforts is James Bongiorno, clearly one of the leading innovators in the audio industry. During the last fifteen years beginning with Dynaco, through his stay at S.A.E. and Great American Sound, and culminating with his founding of SUMO, his designs have been consistently in the forefront of technology. They brought him numerous awards from prestigious audio publications world wide and are among the most copied in the industry. SUMO's new products reflect Mr. Bongiorno's continuing efforts at achieving perfection in sound reproduction and making it available to audiophiles worldwide at affordable prices.

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