

VANDERSTEEN

MODEL 2C



DIMENSIONAL PURITY

The VANDERSTEEN MODEL 2: at the forefront

First introduced in 1977, the original Model Two set the stage for the future with its innovative design. Advanced concepts such as minimum area baffles for driver mountings which virtually eliminate cabinet-edge and grille diffraction anomalies, mass alignment of driver elements to insure proper time arrival, and transient perfect first-order crossover networks have been fundamental to the design of the Model Two.

As part of the continuing evolution of the Model Two, Vandersteen Audio was the first speaker manufacturer to use the Gen-Rad 2512, a Fast Fourier Transform analyzer originally developed for

the aerospace industry for in-house research and development. More recently, Vandersteen Audio became a licensee for the Heyser Time-Delay Spectrometry (TDS) system.

The latest Vandersteen innovation is the Electro-Mechanically Optimized Woofer system which represents years of research using FFT analysis in conjunction with extensive listening sessions.

The Model Two is at the forefront of speaker technology offering a level of musical reality and innovative design seldom found in competing products at any price.

The Active Components

The active components used in the Model Two represent a level of quality normally associated with far more costly products. Unusual for a speaker at this price level is the use of cast-metal baskets for the woofer and midrange drivers. Cast baskets offer the advantage of increased stiffness, resulting in more accurate motion of the cone. They are also acoustically inert which significantly reduces sympathetic resonances. Polycones are used to insure high internal stiffness when compared with more commonly used cone plastics such as hextrene and polypropylene.

The 10" rear-mounted acoustic coupler, together with the 8" forward-firing woofer helps to correct for "real world" conditions such as box loss, thermodynamic loss, and active/passive transfer non-linearities. This Electro-Mechanically Optimized Woofer system allows the Model Two to operate more closely to the ideal than any of the more conventional ported or passive designs.

All drivers are custom manufactured to insure linear operation several octaves beyond the cutoff frequency for near seamless blending.

- | | |
|--------------------------|---|
| TWEETER: | <ul style="list-style-type: none">• 1" critically damped textile dome• Low moving mass with high efficiency magnetic system for excellent transient response and extended bandwidth• Ferrofluid voice coil cooling• Range of operation: 4.5KHz—30KHz |
| MIDRANGE: | <ul style="list-style-type: none">• 4½" die-cast basket with linear surround curvilinear polycone• Ferrofluid voice cooling• Range of operation: 500Hz—4.5KHz |
| WOOFER: | <ul style="list-style-type: none">• 8" die cast basket with curvilinear polycone• 1½" two-layer voice coil with ventilated aluminum former• 40-oz. focused-gap magnetic structure• Range of operation: 35Hz—500Hz |
| ACOUSTIC COUPLER: | <ul style="list-style-type: none">• 10" critically damped long-fiber cone• 1½" four-layer voice coil with ventilated aluminum former• Range of operation: 28Hz—35Hz |

The Crossover

The transient perfect first-order dividing networks use low-impedance air-core inductors with polycarbonate, polypropylene, and IAR Wonder Caps® in the signal path. Phase and impedance-compensating networks are employed to eliminate frequency non-linearities commonly associated with typical crossover designs. The computer-grade components are hand soldered using IAR Wonder Solder™ on a double-sided, plated-through

Mil-Spec FR-64 PC board, tested to insure an insertion loss of less than .2db. In order to maximize signal transfer OFC with polypropylene dielectric is utilized for internal wiring of active components. The versatility of the crossover also allows for bi-wiring or bi-amping when using two identical stereo amplifiers. Versatility and innovative circuit design combine to preserve the dimensionality and dynamics of music.

The Construction

With conventional speaker enclosures, the transmission of resonances from the active drivers inherently cause secondary vibrations in the enclosure. The Model Two is designed with the aid of an accelerometer inter-faced with an FFT computer.

This results in the use of multi-fiber, a wood product far more dense and stable than particle board, and determines the shape and thickness of the thirty-three internal cabinet parts.

Broad-spectrum, low-Q resonances are then controlled so as to cancel rather than become additive.

To be compatible with your decor, hand-matched natural oiled wood veneers are used exclusively, and an acoustically transparent grille structure was designed to envelope the internal components of the Model Two.

The Aligned Dynamic Design

The superiority of the Model Two is not attributable to any single design factor; rather it is the result of a skillful blending of common-sense innovation with proven technology. Only after careful consideration of several design concepts, including planar and electrostatic, the aligned dynamic design was selected due to its many potential advantages:

- Overall polar response closely resembles studio microphone pick-up patterns, resulting in precise imaging and a wider, more dimensional listening area.
- Greater flexibility of placement options within the listening room, while providing better "real world" transient response due to the lack of out-of-phase rear-wave cancellations and inter-panel interference.

The Aligned Dynamic Design

- Higher efficiency and wider dynamic range.
- Total absence of "edge-clamping" distortions which exist in all rectangular electrostatic and planar panels.
- The ability to be driven by any amplifier since no damaging low impedance dips exist in the Model Two's electrical characteristics.

In order to fully realize the advantages of the aligned dynamic design, a truly innovative approach was taken. The radiating area of each driver was computer-optimized to minimize undesirable internal diffraction, cone break-up, and out-of-band phase

irregularities. The selection of transient-perfect first-order cross-over networks, impedance and phase-compensating networks, and use of computer-grade components guarantee a seamless blending of drivers at the listening position.

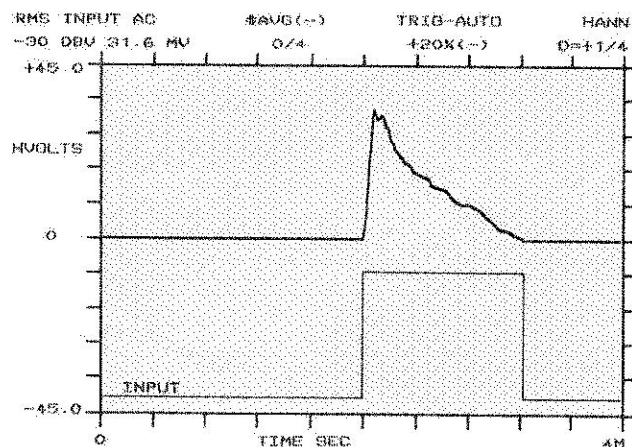
Vandersteen Audio has had more experience with FFT analysis than any other audio firm. The computer-optimized driver placement and enclosure design virtually eliminate any interference patterns normally associated with multi-way designs and allows a point-source wave front for correct sound-stage replication, essentially impossible to achieve in any large-panel design.

The Almighty Specification

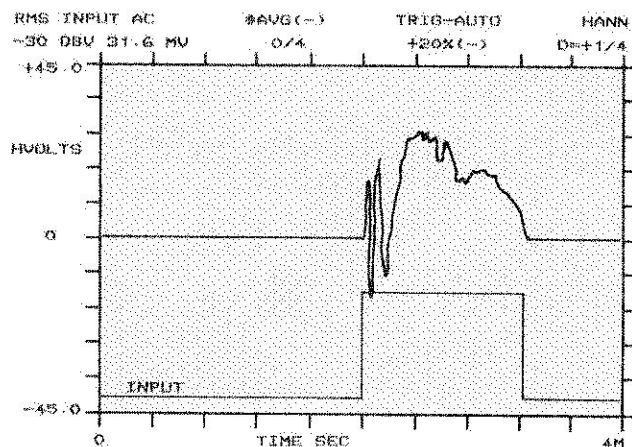
Even with advanced test equipment and complex computer analysis, loudspeaker design is still an incomplete science. No measurements currently available can fully convey the sound

of a speaker or provide a meaningful comparison between differing designs.

The truth is in the listening.



FFT IMPULSE
MODEL 2



FFT IMPULSE OF
WELL KNOWN
\$3000 (BRITISH)
THREE-WAY

IMPEDANCE

7.8 OHMS ± 1 OHM: from 100Hz to 20,125Hz
Minimum: 6 OHMS

EFFICIENCY

88dB with 1 watt of pink noise input
at 1 meter on axis

RECOMMENDED ASSOCIATED AMPLIFICATION

40 to 160 watts per channel

FREQUENCY RESPONSE

28Hz to 20,125Hz: by FFT step
function: ± 3 dB
32Hz to 17,025Hz: $\pm 1\frac{1}{2}$ dB

DISPERSION

29Hz to 16,125Hz: ± 3 dB:
90 degrees off axis

CROSSOVER FREQUENCIES

500Hz and 4,500Hz: 6dB per octave slopes

WARRANTY

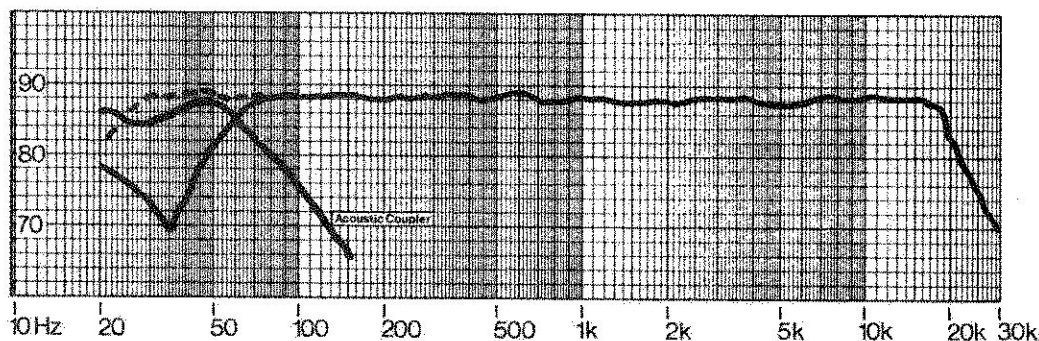
Limited One Year, extendable to five years
with optional warranty registration
(see detailed warranty statement)

CABINET FINISH

Hand-matched and finished
natural oiled wood veneers

PHYSICAL SPECIFICATIONS

36 $\frac{1}{2}$ "h/16"w/10 $\frac{1}{4}$ "d
58lbs; net-63lbs; gross each



MODEL 2

FREQUENCY RESPONSE

2 db / small division
10Hz-500Hz near field (--- composite
response woofer and
acoustic coupler)
500Hz-30kHz 1.5 meter (mike distance)
1 meter (mike height)

The MODEL 2 and your system

The Model Two speaker system is capable of reproducing virtually everything the amplifier feeds its input. With this in mind, great care should be taken in assembling a suitable system in order to avoid the "weak link" syndrome. High quality interconnecting cables and speaker wire will insure a proper frequency balance and a more complete power transfer.

When it comes to component interfacing, please trust your Vandersteen dealer. He was carefully chosen for his ability to

understand the complex tasks required of audio equipment and is well versed in the strengths and limitations of various components. Your Vandersteen Audio dealer is familiar with a wide variety of equipment, enabling him to render expert advice on proper interfacing of components for the best sonic results for any room environment or budget. Only with the aid of your dealer can you realize the full potential of your Vandersteen loudspeakers.

Quality Control

Every Vandersteen Audio Model Two undergoes rigorous testing and re-testing during each phase of construction. The crossover and drivers are individually computer-matched to within .1db.

After final assembly, each pair is subjected to a high-power sweep test and further FFT analysis prior to shipping. This commitment to quality and value is unsurpassed in the industry.

The Company

Vandersteen Audio was founded in 1977 with the commitment to offer the finest in music reproduction for the dollar. Toward this goal we will introduce new, innovative products and improve

existing ones. There will always be a high degree of pride, love, and personal satisfaction involved in each piece before it leaves our facilities.

VANDERSTEEN AUDIO

116 WEST FOURTH STREET, HANFORD, CA 93230 USA
(209) 582-0324

Specifications and design are subject to change without notice due to our continuous research and development program.

Copyright 1986 by Greg Belemjian, Peter Litwack, Jim Skoglund, and Len Scheline.

Literature design by Ron Rick and photography by Alan Ross.

VANDERSTEEN AUDIO products are made in the USA.

