

McIntosh®

MC 2002

POWER AMPLIFIER

"McIntosh's design philosophy is to achieve high performance with stability and reliability by using a simple topology, with selected components operating in their most linear range."

". . . good quality, high reliability and elegant engineering design . . . impressed with the high performance achieved . . ."

"The McIntosh MC 2002 allowed the amp to maintain its aplomb under the same over-driven conditions, and no shredding of sound was heard. The McIntosh's Power Guard prevented the amp from clipping and thus would protect a loudspeaker . . ."

"Overall, the technique used in McIntosh's Power Guard seems best . . ."

"The Power Guard circuitry, is a well-thought-out design for preventing audible distortion and speaker damage from intense clipping."

"Even if we nitpick, it is much appreciated as a first-order solution to a common problem."

"This amplifier, in the McIntosh tradition, should provide 10 to 20 years of maintenance-free service."

Quoted from April 1985
Audio Magazine



The MC 2002 amplifier is designed for the REAL WORLD of 10 decibel overloads from compact disc players.

It combines:

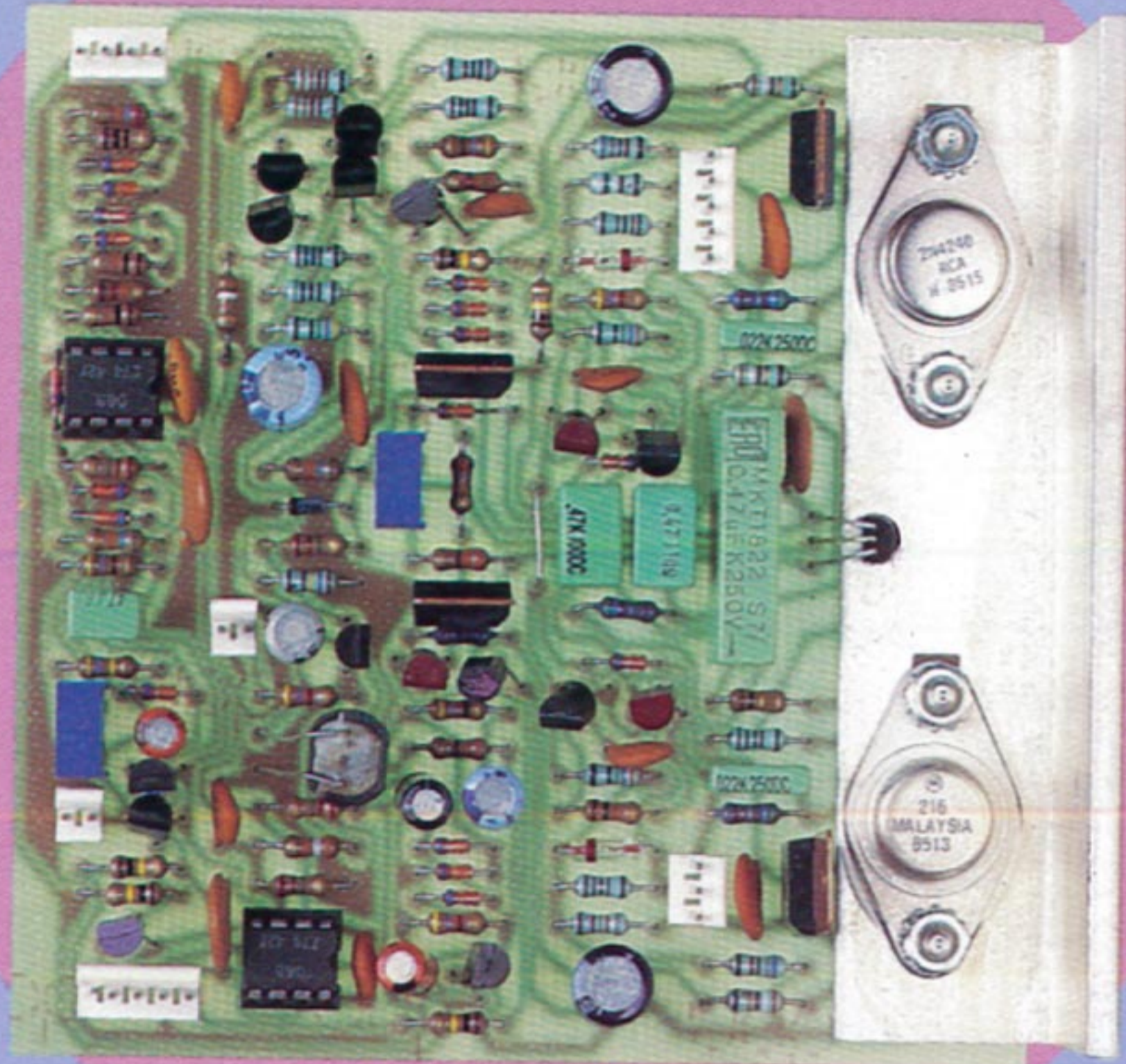
200 watts of extremely low distortion power at 8 ohms.

300 watts of the same power at 4 ohms.

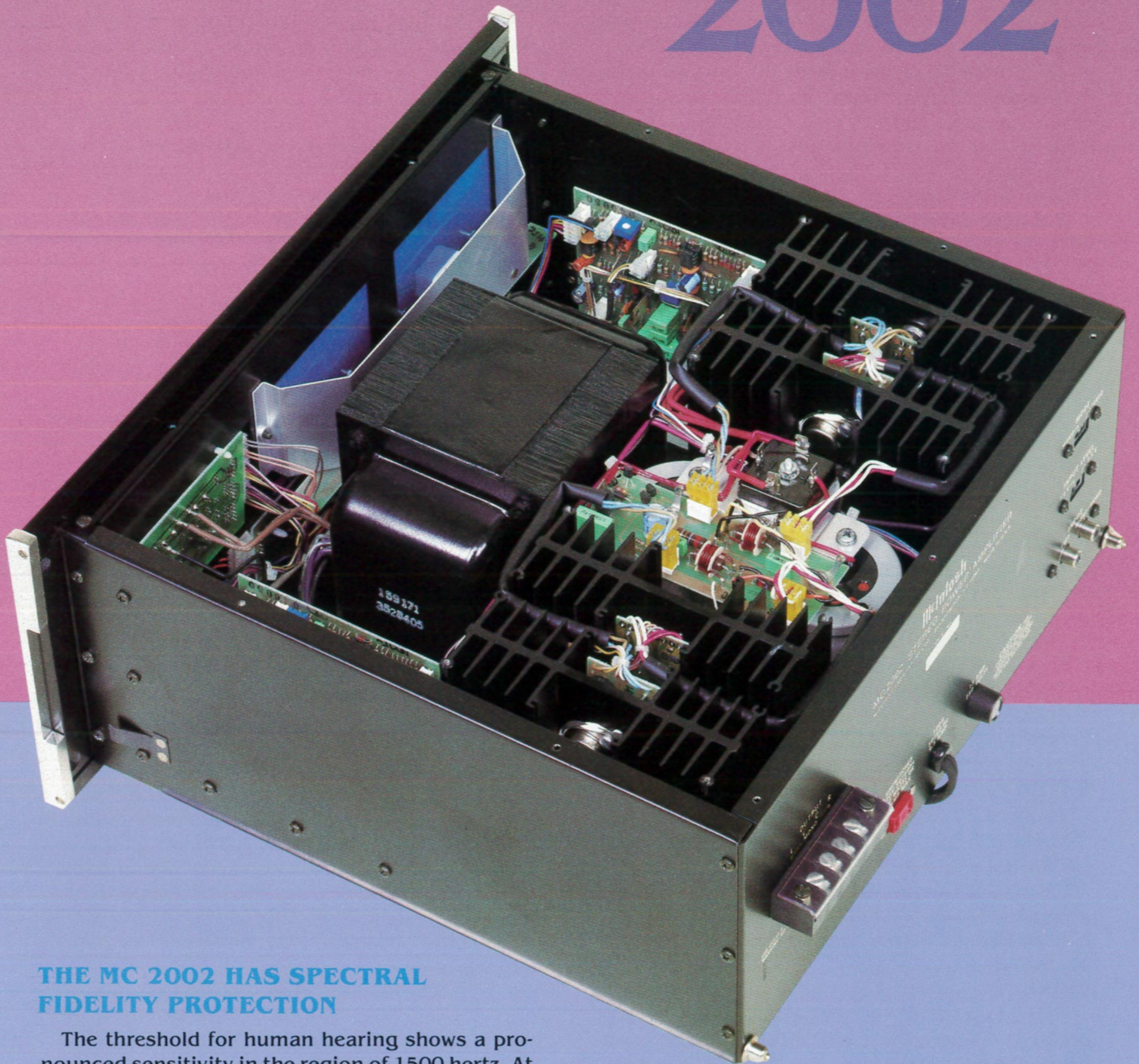
The greatest reliability in modern amplifiers to protect your investment.

And most important, today, design for 10 DECIBELS of overload stress with the greatest Spectral Fidelity.

SPECTRAL FIDELITY is one of the most meaningful characteristics of an amplifier. The harmonic distortion and the two tone intermodulation measurements are important criteria in predicting the sonic performance. However, to obtain better correlation with human hearing response, we need to know not only the energy in the distortion spectrum, but also the number of discords and their frequency spacing from the desired tones. This is what the Spectral Fidelity testing can do, enlarging the scope of the data and showing its meaning more fully.



2002



THE MC 2002 HAS SPECTRAL FIDELITY PROTECTION

The threshold for human hearing shows a pronounced sensitivity in the region of 1500 hertz. At low levels of music, during pianissimo passages for example, is where we hear most intermodulation discords. But during the periods of sonic overload, this sensitivity characteristic changes. Under this condition, the sensitivity of the human ear becomes more uniform over most of the range of hearing. Thus *all* of the discords from sonic overload combine to reduce the musicality of instruments and voices, their clarity and definition. This loss of the order, the structure, and harmony, remembered from live musical experience,

is frustrating and disappointing to the human psycho-physical hearing phenomenon. This frustration is the major cause of unacceptable LISTENING FATIGUE.

Of all the amplifiers tested for Spectral Fidelity under stress, the McIntosh alone could accept the compact disc overload without exceeding 3/10 of 1% distortion. The others produced high levels of distortion, distortion from 20% to 30%. Some designs blew fuses. Others suffered output stage device failures.

Some manufacturers of power amplifiers advertise that their products do not have protection circuits and that such circuits compromise performance. Yet protection circuits actually enhance performance, provide for maximum musicality and prevent amplifier or loudspeaker damage due to abnormal circumstance. The MC 2002 incorporates seven protection circuits to enhance performance, assure reliability and protect loudspeakers.

1. Power Guard

Power Guard, (a McIntosh patent), assures that each channel will deliver full power free of clipping distortion. Clipping is caused when an amplifier is asked to produce more clean power output than its design characteristics can deliver with low distortion. Amplifiers that are overdriven are capable of delivering large quantities of power when they are driven into clipping and they have more than 40% harmonic distortion. The sound is grossly distorted and the extra energy will damage most loudspeakers.

2. Sentry Monitor

All power transistors have limits for the maximum amount of electrical current they can handle. The MC 2002 output transistors and power supply have been designed to allow very high current flow into properly matched load impedances. If the amplifier sees a very low load impedance or short circuit, destructive current levels can be reached. The McIntosh Sentry Monitor circuit (a McIntosh patent) protects your investment. It senses the dynamic operating condition of the amplifier output stage and controls the current flow confining it to design limits. Sentry Monitor permits the amplifier to produce the maximum power output without damage.

3. Thermal Shut-down

All power transistors are limited in the amount of heat they can tolerate. The MC 2002 uses a highly efficient amplifying circuit which produces relatively little heat for the output power produced. The amplifier has four oversized heat sinks to dissipate transistor generated heat. Under normal conditions, the transistors will operate well below their safe temperature limits. Should extra heat be produced, thermal sensors within the MC 2002 will shut down one or both channels. When the temperature is reduced to a safe value, the amplifier operation is returned to normal.

4. Turn-on Delay

The MC 2002 has a turn-on delay circuit that delays amplifier operation about 2 seconds after power turn on to prevent pops or thumps from damaging your loudspeakers or causing annoying noises.



5. Direct Current Failure Protection

All direct coupled power amplifiers require reliable circuits to protect loudspeakers. The MC 2002 has a DC detecting circuit connected to the output transistors of each channel. Should DC appear, instantaneously this circuit clamps the power supply to zero voltage to prevent damage to loudspeakers.

6. Power Line Transient Surge Protection

High voltage surges are sometimes present on 120 volt power lines. These surges can destroy critical electronic circuits. The MC 2002 power supply circuit is arranged to control momentary surges to safe levels without affecting amplifier performance.

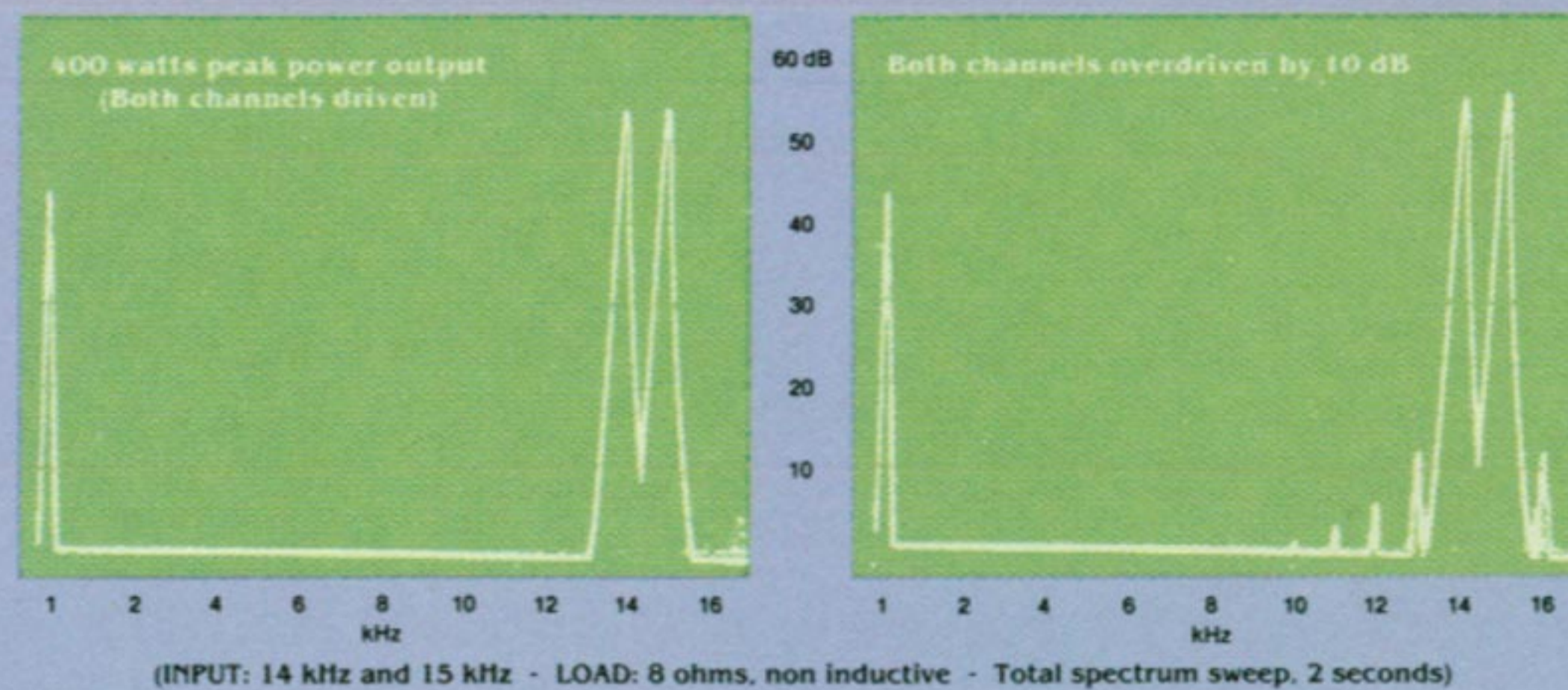
7. Peak Responding Power Output Meters

Power output meters allow the power output to be monitored. This knowledge can be useful to prevent overdriving of the loudspeaker systems and to provide power indication of the actual loudness of program material.

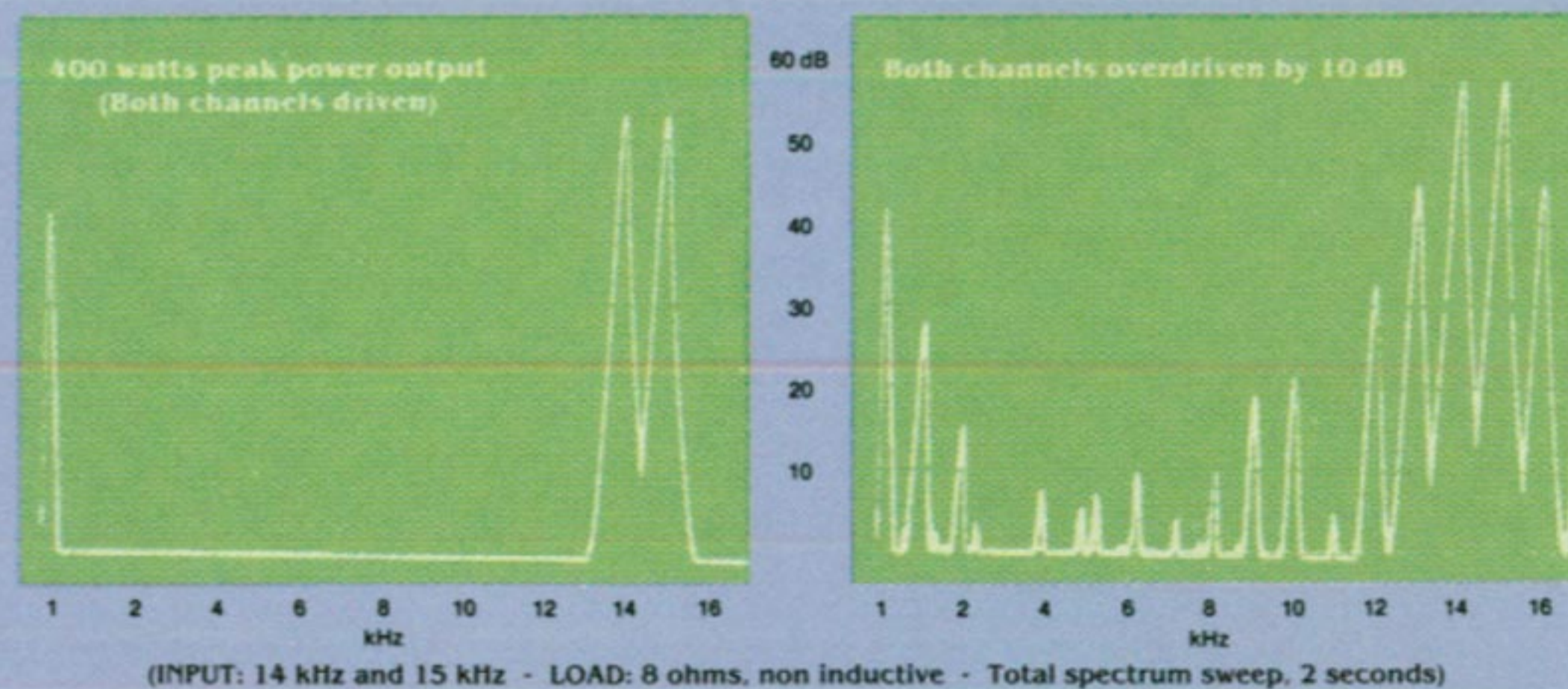
WITH MCINTOSH YOU GET ALL THE MUSIC WITHOUT DISTORTION

Although McIntosh amplifiers cost a little more, you can see that the comprehensive yet conservative design for REALITY is truly worth it! You will find that McIntosh alone is designed for human ears to hear real music, and for human emotions to experience, again, the knowledge of real sonic events, for human fingers to operate controls, human eyes to see and read panel markings.

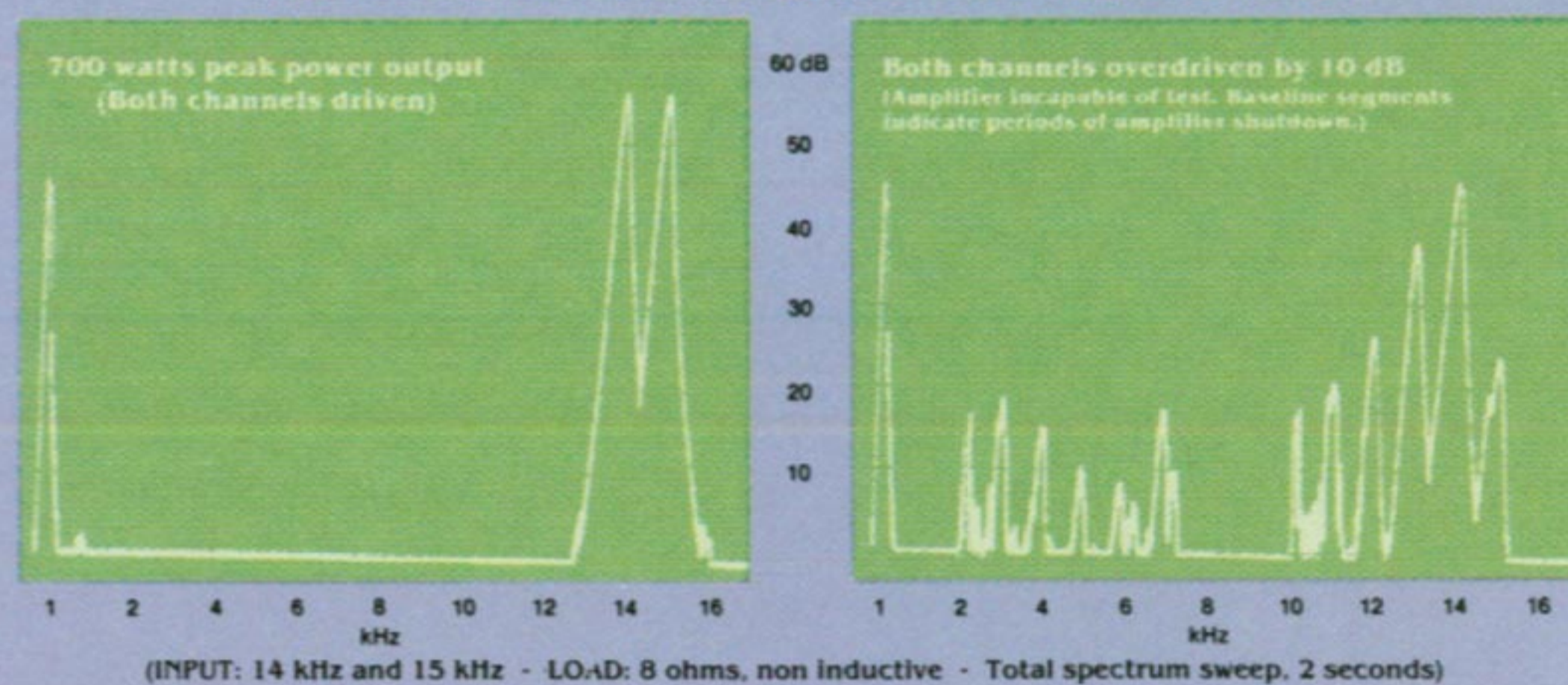
1
McINTOSH MC 2002 POWER AMPLIFIER



2
FOREIGN MANUFACTURED AMPLIFIER SERIAL #P6781



3
DOMESTIC MANUFACTURED AMPLIFIER SERIAL #0595



MORE PROOF OF McINTOSH SUPERIORITY

In these oscillograms, you can see the difference in Spectral Fidelity when a McIntosh is stressed, and when other amplifiers are stressed.

1. The McIntosh stressed 10 dB above rated power.
2. A foreign amplifier stressed 10 dB above rated power.
3. An American manufactured amplifier which had to be tested "under-stressed" since it could not take 10 dB of overload.

The McIntosh shows only 3 distortion components, which are more than 44 and 50 dB down, roughly equivalent to 0.3% distortion. The other amplifier shows 17 discords, some of which are only 10 dB down, or 30% distortion, with many less than 30 dB down, or 3% distortion.

McIntosh customers consistently find that music through their McIntosh sounds better. McIntosh alone meets the test for accuracy, the test for clarity, the test for musicality even when a peak of ten times the power demand suddenly smashes into the power amplifier. When other

amplifiers are similarly stressed they generate large quantities of discordant sounds destroying the real musicality of the reproduced instruments.

Note in the third oscillogram the complete failure of one of the popular American manufactured amplifiers. When 14 and 15 kHz are amplified at the same time, the amplifier shuts down by "motor boating".

It is no accident that McIntosh amplifiers sound better.

It is no accident that a McIntosh is a better investment.

- **It sounds better**
- **It is more reliable**
- **It lasts longer**
- **Its resale value is the highest**

If good enough will do, there are at least 100 answers for you. But if the best is what you need then there is only one real answer. . . .

. . . .the amplifier that in 40 years has outlived 60 others who have simply faded away.

Performance Limits

Performance limits are the maximum deviation from perfection permitted for a McIntosh instrument. We promise you that when you purchase a new MC 2002 from a McIntosh franchised dealer, it will be capable of or can be made capable of performance at or exceeding these limits or you can return the unit and get your money back. McIntosh is the only manufacturer that makes this statement.

PERFORMANCE

McIntosh audio power ratings are in accordance with the Federal Trade Commission Regulation of November 4, 1974 concerning power output claims for amplifiers used in home entertainment products.

POWER OUTPUT

STEREO:

200 watts into 8 ohm loads or
300 watts into 4 ohm loads is the minimum sine wave continuous average power output per channel for 20 Hz to 20,000 Hz with both channels operating, which is:
40.0 volts RMS across 8 ohms or
34.6 volts RMS across 4 ohms.

MONO (Bridged):

600 watts into an 8 ohm load, is the minimum sine wave continuous average power output from 20 Hz to 20,000 Hz, which is
69.3 volts RMS across 8 ohms.

OUTPUT LOAD IMPEDANCE

STEREO: 4 ohms to 8 ohms.
MONO: 8 ohms obtained by connecting across the output terminals of both channels.

RATED POWER BAND

20 Hz to 20 kHz

TOTAL HARMONIC DISTORTION

STEREO:

0.01% maximum harmonic distortion at any power level from 250 milliwatts to rated power per channel from 20 Hz to 20,000 Hz, both channels operating.

MONO:

0.01% maximum harmonic distortion at any power level from 250 milliwatts to rated power from 20 Hz to 20,000 Hz.

INTERMODULATION DISTORTION

STEREO:

0.01% maximum at any power level from 250 milliwatts to rated power with both channels operating, for any combination of frequencies from 20 Hz to 20,000 Hz.

MONO:

0.01% maximum at any power level from 250 milliwatts to rated power for any combination of frequencies, 20 Hz to 20,000 Hz.

FREQUENCY RESPONSE (at one watt output)

+0, -0.25dB from 20 Hz to 20,000 Hz
+0, -3.0dB from 10 Hz to 100,000 Hz

HUM AND NOISE

100dB below rated output
90dB IHF

RATINGS

IHF DYNAMIC HEADROOM:

2.1dB at 4 ohm load
1.7dB at 8 ohm load

DAMPING FACTOR

Greater than 100

INPUT IMPEDANCE

20,000 ohms

INPUT SENSITIVITY

Switchable for either 1.4 volt or 2.5 volt

POWER REQUIREMENT

120 Volts, 50/60 Hz, 0.6 to 15 amperes

MECHANICAL INFORMATION

SIZE: Front Panel measures 16 3/16 inches wide (41.1 cm) by 7 1/8 inches high (18.1 cm). Chassis measures 14 3/4 inches wide (37.5 cm) by 6 1/2 inches high (16.5 cm) by 14 1/2 inches deep (36.8 cm), including connectors. Clearance required in front of the mounting panel is 3/4 inches (1.9 cm).

FINISH: Front panel is anodized gold and black with special gold/teal nomenclature illumination. Chassis is black.

WEIGHT: 50 pounds (22.7 kg) net. 64 pounds (29 kg) in shipping carton

Franchised Dealer:

039-520

Printed in U.S.A.



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