Mclntosh

The aim of Mclntosh...

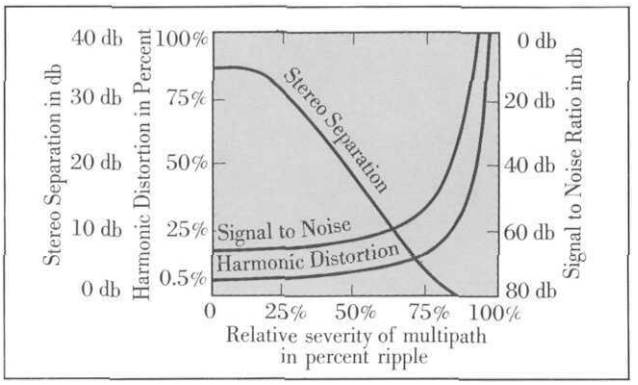
to give you the most performance, the most reliability, the most satisfaction, for the least investment.

MI3

The Mclntosh MI 3 is five laboratory instruments combined into one compact unit. It is a professional oscilloscope, relative signal strength indicator, calibrated FM deviation meter, calibrated balance meter and phase indicator. These instruments are used by FM stations to determine the best possible performance for your listening enjoyment. The Mclntosh MI 3 Maximum Performance Indicator makes it easy for you to attain professional broadcasting quality FM listening.


McIntosh
AUDIO DISPLAY
L+R
L-R
MIN
SCOPE TEST
HORIZONTAL POSITION
L & R AUDIO
MULTIPATH
TEST
MI-3 MAXIMUM PERFORMANCE INDICATOR

MI3 CONTINUED



The MI 3 gives a visual reference showing you how to eliminate multipath reception. Multipath is a reception, and antenna problem. Generally it is independent of tuner specifications or performance. To overcome multipath reception it is necessary to orient the antenna for minimum multipath reception. With multipath reception eliminated your FM reception has:

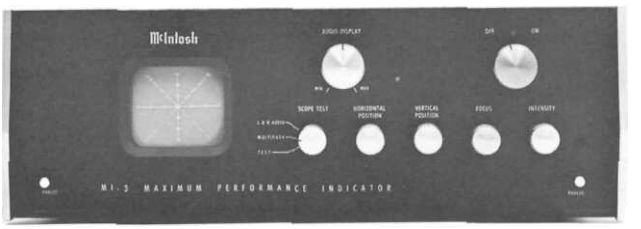
... minimum noise level
... absolute minimum distortion
... fullest stereo separation
... overload protection from strong signals.

With practice, good clean FM signals are easy to identify. Before you start recording you can tell which FM stations you receive with a good clean FM signal. You know when a station is broadcasting a true stereo broadcast. You know when you are getting the maximum performance possible from your FM tuner.

Here is how it works

The Mclntosh MI 3 is a professional oscilloscope. The three inch oscilloscope displays the electrical signals present in your stereo system. The display changes position and shape with the program material present in your stereo system. With a small amount of practice you can interpret what the display means to your listening enjoyment.

To show multipath, the horizontal display voltage is obtained from the tuner discriminator output before de-emphasis. This voltage is proportional to the frequency deviation of the FM transmission. The maximum width of the indicator screen is designed to equal approximately plus and minus 75 KC deviation of the FM transmitter.



The vertical display voltage is obtained from the tuner automatic gain control circuit at the input of the first limiter. This voltage is proportional to the station's signal strength. Even weak stations will produce adequate vertical voltage for display.

For audio displays the horizontal display voltage is obtained from the right channel output of the preamplifier or power amplifier. The vertical display voltage is obtained from the left channel output of the preamplifier or power amplifier. The resultant display shows you the amount of stereo separation. It also shows the amplitude of the signals present.

Mclntosh C 22... The Preamplifier you don't hear

Music through a C 22 does not change measurably. The departure from perfection in the power out of the C 22 is less than one part in 25,000,000. Pure music means hours of listening enjoyment. Every musical passage, loud or soft, is re-created accurately.

Care in manufacturing

You get performance excellence with a C 22. Each C 22 passes 47 tests designed to prove it is ready for you. Frequency response, harmonic distortion, hum, balance, equalization, plus all functions are tested and re-tested. Published specifications are minimum performance standards backed by a money back guarantee.

The 757 parts in a C 22 run well within their performance margins. This gives you longer trouble free performance. You get a free three year service contract with all Mclntosh products. Low noise tubes, metal film wire wound resistors plus high specific resistivity circuit boards achieve low noise performance thought impossible a few years ago. Each part used is chosen for maximum performance and maximum reliability.

In dimly lit rooms the illuminated front panel is easy to use. A brightness switch gives you control of the amount of light on the front panel. Both the mode and input selector positions are shown by an easy to see moveable red dot.

Features:

Four high level inputs, Aux, Tape, Tuner 1 and Tuner 2 plus four low level inputs, Tape Hd, Mic, Phono 1 and Phono 2 are provided. There are tape input/output jacks located on the front panel. A portable tape recorder can be used with the front panel jacks. If you want to record merely turn the switch to record, to playback, switch to playback. No other preamplifier offers this convenience. Five AC outlets are provided, four switched, one unswitched.

Separate bass and treble controls are used, each having 11 steps. Each step is 4 db increase or decrease. Record compensation is either RIAA or LP. A tape monitor switch al-

C22 CONTINUED

lows instant checking of recordings in progress. A rumble filter with a 50 cycle cutoff eliminates any low frequency noise from a record player, or can be used to eliminate any acoustic feedback in the system. A high frequency filter with a 5,000 cycle cutoff reduces surface noise on old noisy records, or from noisy stereo broadcasts.

Behind the panel controls:
There are two output level controls, left and right, plus a combined L+R output. There are left and right low frequency trim controls that boost up to 6 db below 100 cycles. Tape head equalization is continuously variable for maximum performance from various tape heads. A phase switch provides the last necessary touch for stereo enjoyment.

C 22 Specifications:

Frequency Response
± 0.5 db from 20 to 20,000 cycles

Distortion
Less *than 0.2% at 10 volts output, 20 to 20,000 cycles*
Less than .1% at 3 volts output. 20 to 20,000 cycles

Hum and Noise
High level inputs: 85 db below rated output
Low level inputs: Less than 1.5 microvolts at input terminals

Outputs
Main (2 jacks on each channel) : 2.5 V with rated output
Tape: 0.25 V with rated output
L + R: 1 V from generator impedance of 25,000 ohms

Input Sensitivity and Impedance
Auxiliary, 0.25 volts, 250,000 ohms.
Tape, 0.25 volts, 250,000 ohms.
Tuner 1, Tuner 2. 0.25 volts, 250,000 ohms.
Phono 1 and Phono 2: 2 millivolts, 47,000 ohms.
Microphone: 2.5 millivolts, 1 megohm.
Tape Head: 2 millivolts, 1 megohm.
Tape Compare: 0.25 volts, 250,000 ohms.

Dimensions
16" W by 5 7/16" H by 13" D including connectors

Weight
16 pounds, 25 pounds in shipping carton

C 24...Now the Solid State Preamplifier that all other Solid State Preamplifiers have tried to be.

Two years of research brings you the solid state preamplifier that other solid state preamplifiers have tried to be. Distortion has become a thing of the past. The Mclntosh C 24 solid state preamplifier is 99.9% perfect.

AUDIO magazine in the Equipment Profile said this about the C 24 distortion: ".. . less than 0.1 percent from 20 to 20,000 cps." "... impressive performance figures ..."TheC24 uses 18 silicon planar solid state devices. Design excellence, coupled with testing makes the C 24 an excellent preamplifier. Like all Mclntosh products the C 24 must meet its published specifications before it is ready for you. Each circuit, each electrical connection, each function is checked and rechecked. Testing takes time. Exacting Mclntosh testing takes even longer. The published specifications of the C 24 are your guarantee of performance. You will receive a full cash refund of our advertised price if your C 24, or any other Mclntosh product, fails to meet its specifications. No one else offers this money back guarantee.

C24 CONTINUED

Best dynamic range

The C 24 has the best dynamic range of any solid state preamplifier. It will not distort music from a record when a high output magnetic cartridge is used. Audio said . . . "the preamp will not overload . . . until the input signal reaches 100 mv." This is almost ten times more voltage than any magnetic cartridge can deliver.

Features:

Three high level inputs, Aux, Tape, Tuner, and three low level inputs, Tape Hd., Phono 1 and Phono 2 are provided. There are also low impedance headphone jacks on the front panel. Two record equalizations, RIAA or LP, take care of your record listening needs. A tape monitor switch makes instant comparison of tape recordings in progress easy. Low frequency cutoff at 50 cycles eliminates turntable noise, or acoustic feedback. A high frequency cutoff of 5,000 cycles can eliminate record scratch, and hiss from tapes. A phase switch provides the necessary touch for full stereo. A speaker on-off switch lets you listen to headphones in complete privacy. Bass and treble controls are continuously variable. Maximum boost and cut is ±18 db. Continuously variable contour allows you to choose the precise amount of loudness you want at any volume setting. Left plus right output can be adjusted ±6 db from the main output. This means you can run auxiliary speakers at any desired level above or below the main volume. No other preamplifier allows this flexibility.

C 24 Specifications:

Frequency Response

+0 -0.5 db 20 to 20,000 cycles

Distortion

Less than .1 % at 2.5 volts 20 to 20,000 cycles

Less than .3% at 10 volts 20 to 20,000 cycles

Total Noise

High level inputs: 110 db below rated output volume control counterclockwise, 75 db volume control clockwise

Low level inputs: 60 db below rated output; or less than 4 microvolts at input terminals

Main Outputs

2.5 VOLTS output with rated input

Tape Outputs

.20 volts into 25,000 ohms with rated input; 1.2 volts with 10 millivolts at phono input

Left Plus Right Output

2.5 volts from generator impedance of 10 K ohms; controlled ±6 db from normal stereo output level

Dimension

16" W by 5 7/16" H by 11" D including connectors

Weight

17 pounds net,
In shipping carton 25 pounds


MODE SELECTOR
McIntosh
C24 SOLID STATE
STEREO PREAMPLIFIER
VOLUME
BALANCE

MX 110

Here is a control center you grow into. Start with one record player and then add a second. You can add either a tape recorder with its own built-in electronics, or a tape player without electronics.

Features:

Bass and Treble are easily adjustable. Muting eliminates hiss between stations. The Low Frequency Filter reduces noise from records or acoustic feedback. The High Frequency Filter reduces record scratch or tape hiss. The Balance control centers the music. Loudness compensation gives full rich music at low listening levels. The MPX STEREO indicator glows when a station broadcasts FM stereo. Tuning eye helps to accurately tune FM.

MX 110 Tuner Specifications:

Sensitivity
2.5 microvolts IHF

Frequency Response
Within 1/2 db 20 to 20,000 cycles

Distortion
Less than 0.5% at 100% modulation

Capture Ratio
1.7 db

RF Amplifier
Cascode using Nuvistor in first stage

IF Amplifiers
Four stages; AGC used to insure limiting occurs only in the limiter stages

IF Bandwidth
200 KC bandwidth

Limiter
Two

Muting
// injected; at least 60 db quieting between stations

Antenna Inputs
300 ohms balanced, 75 ohms unbalanced

Multiplex Channel Separation
Better than 30 db at 1000 cycles

Preamplifier Specifications

Distortion
Less than 0.2% at rated output

Frequency Response
Within 1/2 db 20 to 20,000 cycles

Hum and Noise
High level inputs; 80 db below rated output. Low level inputs; less than 3 microvolts at input terminals (audio tubes have DC on the filaments)

Output
Main: 2.5 volts with rated inputs
L+R: 2.5 volts
Tape: 0.9 volts from FM at 100% modulation

Dimensions
16" W by 5 7/16" H by 13" D including connectors

Weight
27 1/2 Ibs., in shipping carton 36 Ibs.


MC
88
90
92
VOLUME
0
10
M°X 110
STER
MUTING
IN
OUT
BASS
L
R
INPUT SELECTOR
FM
MPX
AUX
PHONO 1
PHONO 2
TAPE HD

The MR 71 is "superber

Audio. February, 1965.

"In February, 1964, we profiled the Mclntosh MR 67 stereo tuner and during the course of the description we stated that: '...it is unexcelled by any other tuner we had occasion to test in recent years.' This is no longer true. It is excelled by the MR 71."

Here is the best tuner value today. Every wanted and needed feature for excellent stereo reception is on the MR 71. Sensitivity is highly refined. Distant stations sound as clear and full as nearby stations. One of the most important features of the MR 71 is a computer designed deep notch filter. This filter is designed to eliminate storecast programming. Many FM stations not only broadcast stereo programming but also background music services. This is sometimes noted as whistles or birdies in the background of a stereo broadcast. Over 35 hours of computer time solved the complex engineering problem. Now you get undisturbed multiplex reception when a station also broadcasts storecasting. This kind of engineering, that cares about performance, and about your listening enjoyment is what makes the MR 71 the excellent tuner it is. A major plus is the time tested and proven performance of all Mclntosh units. The MR 71 carries on the Mclntosh tradition of highest quality performance at the lowest possible cost. There is no sacrifice in reliability.

Features:

Nuvistor front end for maximum sensitivity. Built-in multipath indicator tells you when you are getting performance from your antenna system. The self-peaking multiplex decoder does away with re-alignment. The decoder will remain in alignment year after year. The signal strength meter makes it easy to tell when you are receiving maximum signal strength. The center channel meter tells you when you are precisely tuned to the center of the FM station. This means minimum noise and maximum enjoyment. Silent, efficient, multiplex switch works only on stations broadcasting in full stereo. A two position dial brightness switch makes it easy to adjust the amount of

light on the front dial. A convenient front panel volume control can be used, or if you prefer, constant volume outputs on the rear of the tuner they can be connected to your control center. Completely variable AFC control makes it easy to use just the right amount of AFC to hold distant weak stations right beside strong local ones. A front panel muting switch keeps the noise down between stations, or can be switched out for the times you want to do some long distance listening. Both 300 and 75ohm antenna terminals are provided on the rear panel. AC outlets on the rear panel of the tuner turn on when the tuner is on. Flywheel tuning with no backlash makes tuning the MR 71 a continuing pleasure.

MR 71 Specifications:

Useable Sensitivity
2.5 Microvolts IHF

Audio Frequency Response
Within 1/2 db 20 to 20,000 cycles

Distortion
Less than O.5% at 100% modulation, ± 75 KC

Capture Ratio
1.5 db at 100% modulation

Muting
IF injected. 60 db of quieting between stations

Image Rejection
Better than 80 db at 90MC: better than 70 db at 105MC.

Hum
Better than 70 db below 100% modulation

Output
Approximately 2.5 volts; low-source impedance

Antenna Inputs
300 ohms balanced; 75 ohms unbalanced

RF Amplifier
Casecode with 6DS4 Nuvistor in first stage

IF Amplifiers
Five stages, with 200 KC bandwidth

Multiplex Channel Separation
Better than 30 db at 1000 cycles

Limiter
Two stages

SCA Filter
50 db down at 67 KC to 74 KC 275 db per octave slope

Automatic Mono-Stereo Switch
An exclusive Mclntosh development; all electronic automatic mono stereo switching circuit

Multiplex type
Peak-detecting, self-matrixing detector.

Dimensions
Front Panel, 16" W by 5 7/16" H by 13" D

Weight
Chassis only, 27 pounds.
In shipping carton, 37 pounds.

Mclntosh power amplifiers...

You get an extra plus with every Mclntosh power amplifier. Something no one else can give you. Something so special and unique the US government issued six patents covering it. That something is the Mclntosh bifilar wound output transformer with unity coupling.

No other amplifier can sound as pleasing as a Mclntosh. No other amplifier can use the patented Mclntosh circuit. This circuit gives you a basic advantage when you own a Mclntosh. The patented Mclntosh unity coupled circuit gives you the lowest distortion performance from tubes and transformers.

You get a reserve built into every McIntosh unit. In the power amplifiers it is not just reserve power, it is the reserve margin of safety for each piece and component used in the power amplifier. Nothing is run to its full limit. Everything is given a great safety margin. This kind of engineering means long life and more performance. There is extra value built into every Mclntosh power amplifier. How do you look for value in a power amplifier? Look at the quality of construction, ask the dealer if the design has proven reliable, is the amplifier known for its design excellence? Check for mechanical strength, electrical versatility, convenience and stability. Each of these values has been developed to the highest degree in every Mclntosh power amplifier.

Ask the dealer how long the factory guarantees the product? With a McIntosh you get a free three year service contract. You can't spend a dime for repairs. Only transportation is excepted from the factory service warranty.

Only Mclntosh guarantees its written specifications. In fact we will refund the full advertised price of any Mclntosh equipment that does not meet its published specifications.

Compare this proven and guaranteed performance of McIntosh amplifiers with anything else costing more or less. Only McIntosh gives you the most value for your investment.

MC225

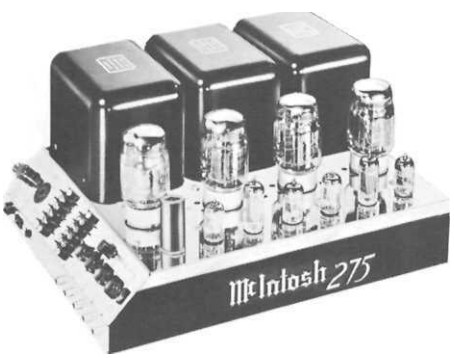
The MC 225 is designed to give sufficient power for low listening or medium volume listening with efficient loudspeakers. The power output is 25 watts per channel. Distortion is less than 0.5%. If you live in a small apartment, are going to be using high efficiency loudspeakers this is the power amplifier for you.

MC 240

The most popular Mclntosh power amplifier. This one amplifier is used in more distinctive music systems than any other. Here is sufficient power to drive all but the most inefficient loudspeakers. If you like your music medium loud to loud, if you want realism, if you want to know you are getting the full bodied richness that comes from adequate power, the MC 240 is for you.

MC 275

A stereo power house. Here are two 75 watt amplifiers on one compact chassis. The MC 275 is for the person who wants the finest in sound reproduction. All loudspeakers from the smallest to the largest sound best with the MC 275. Every listening situation is handled with ease. Never is the amplifier straining. The MC 275 delivers over 300 watts of peak power. No wonder music sounds natural and full. There is no mechanical sound to music when you use an MC 275.



Power Amplifier Specifications:

Power Output *(with both channels operating)*
MC 225: *25 watts per channel*
MC 240: *40 watts per channel*
MC 275: *75 watts per channel*

Harmonic Distortion
Less than 0.5% at rated output or less, 20 to 20,000 cycles.
Typical performance is 0.3% or less 20 cycles and 20,000 cycles at full power.

Frequency Range
At rated output: +0 -0.5 db 18 cycles through 60,000 cycles.

Input
Input impedance: 250,000 ohms.
Input sensitivity: 0.5 volts to 30 volts.

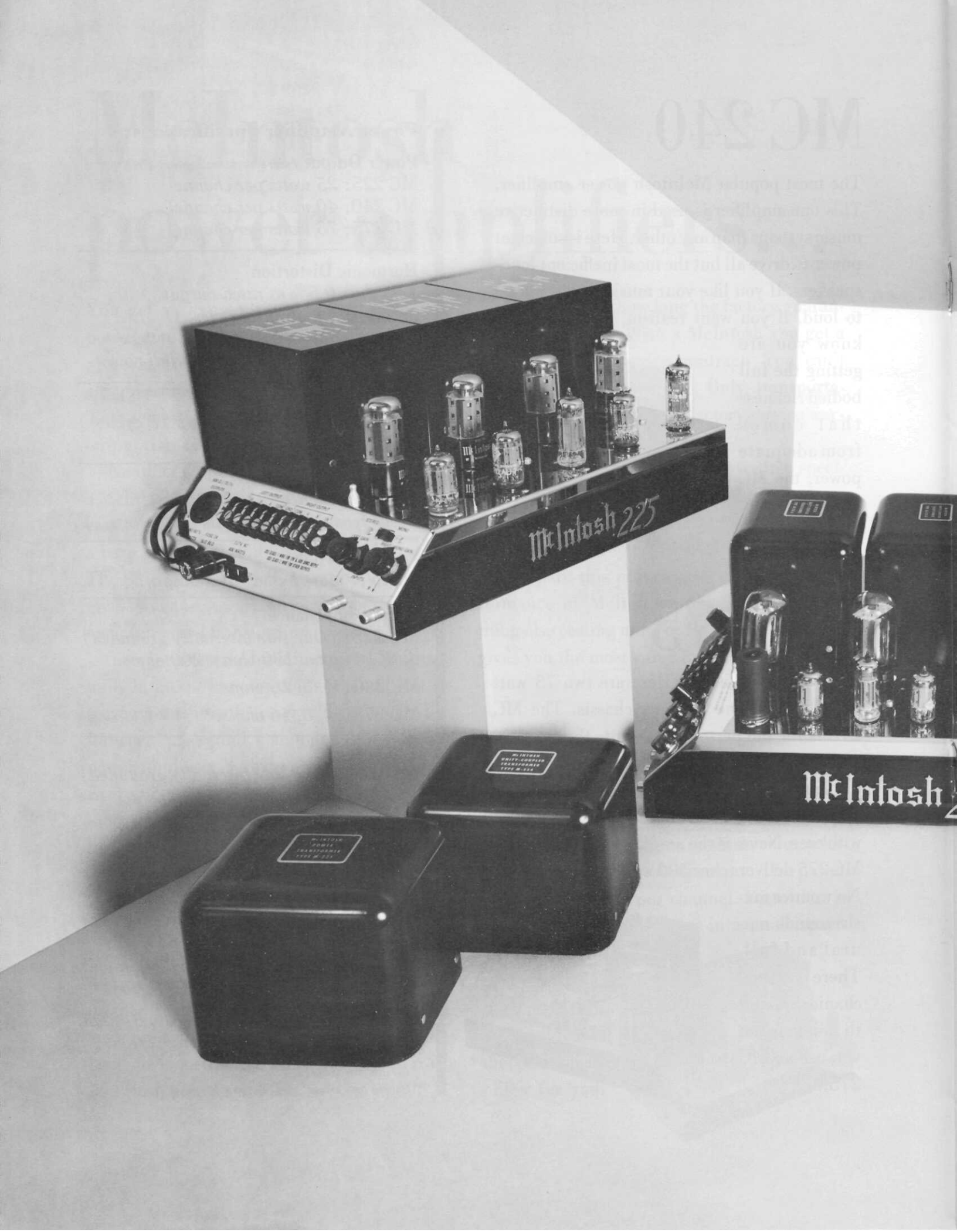
Noise and Hum
90 db or more below rated output.

Output Impedance
MC 225: *(One side internally grounded)* 4, 8, *16 ohms, 150 ohms, 200 ohms.*
MC 240: *4, 8, 16 ohms.**
MC 275: *4, 8, 16 ohms.**

Mono
MC 225: *(One side internally grounded) 2, 4, 8 ohms also other impedances.*
MC 240: *2, 4, 8,16, 32 ohms* **
MC 275: *2, 4, 8, 16, 32 ohms* **

Dimensions
MC 225: *I41/2"long 91/8"wide 7" high. 34 Ibs. net. 39 Ibs. in shipping carton.*
MC 240: 17 1/2" *long 103/4"wide 8"high. 49 Ibs. net. 59 Ibs. in shipping carton.*
MC 275: *171/4"long 121/4"wide 8" high. 67 Ibs. net. 75 Ibs. in shipping carton.*

** Isolated from ground*
*** Isolated from ground, also other impedances.*


McIntosh 225
McIntosh


240
McIntosh 275

MR 67... "Unexcelled by any other tuner..."

Audio Magazine **Equipment** Profile. February, 1964.

Audio went on to say... "...the MR 67 is superb...indeed, in overall performance it seems to be better than the measurements indicate..highest quality of components and construction. In our opinion, it is precisely this, quality of construction and parts, which makes the MR 67 a superb product. The sound it produces is excellent...the tuning 'feel' of the MR 67 is the most perfect we have experienced..."

104 tests assure you of top performance. 31 alignment tests, 11 FM multiplex alignment tests, 16 function tests, 28 voltage tests, 18 performance tests, are made to assure your FM stereo enjoyment. Each test has sharply defined limits. These limits are meant to make your tuner perform superbly. Testing takes time. Mclntosh testing is more exacting and takes longer. Each tuner is individually calibrated. There can be no hurry. Each tuner brings its owner top notch performance from all FM stereo broadcasts.

Features:

Built in multipath indicator...Nuvistor front end...self-peaking multiplex decoder...precision center channel tuning meter...automatic multiplex indicator...two position dial brightness...front panel volume control... front panel muting switch...300 or 75 ohm antenna terminals...AC outlet on the rear panel...constant volume output jacks... logging scale . . . flywheel tuning with no backlash.

MR 67 Specifications:

Useable Sensitivity
2.5 microvolts IHF

Audio Frequency Response
Within ½ db 20 to 20,000 cycles

Distortion
Less than 0.5% at l00% modulation, ±75KC

Capture Ratio
1.7 db at 100% modulation

Muting
IF injected.

Image Rejection
Better than 60 db

Hum
Better than 70 db below 100% modulation

Output
2.5 volts, low-source impedance

Antenna Inputs
300 ohms balanced,
75 ohms unbalanced

RF Amplifier
Cascodewith Nuvistor in first stage

IF Amplifiers
Four stages ;
AGC used to insure that
limiting occurs only in the limiter stages

Multiplex Channel Separation
Better than 30 db at 1000 cycles

Limiters
Two stages

Tape Output
.25 volts with rated input

Dimensions
16" by 5 7/16" by 14½" D.
Weight *27 pounds net.*
37 pounds in carton

Value Analysis

Proof of MR 67	Price	Multipath Indicator	Nuvistor Front End	Visual Center Channel Indicator	Flywheel Tuning—No Backlash	Electronic Noise Rejecting Mpx Light
MR 67	$299.00	Yes	Yes	Yes	Yes	Yes
A	279.95	No	No	No	No	No
B	299.50	No	Yes	No	No	No
C	475.00	No	No	No	No	No
D	365.00	No	Yes	No	No	No
E	315.00	No	Yes	Yes	No	No
F	650.00	Yes	No	Yes	No	No

MA 5100 "...offers the kind of performance once associated only with separate preamps and power amps."

"High Fidelity" Magazine

The MA 5100 is designed to give you full dynamic range. Music will never sound harsh or distorted due to overload. No matter what you are listening to your MA 5100 will let you hear all there is to hear.

Power to Spare

The MA 5100 will deliver 45 watts per channel with both channels operating. This is RMS continuous power. IHF music power rating is 63 watts per channel. This is power to spare. Music is reproduced accurately. There is no fuzziness. At 5 watts output the distortion is less than 1/100 of 1%. At full 45 watts power output, distortion is less than ¼ of 1% from 20 cycles to 20,000 cycles. No other combination unit gives you this performance.

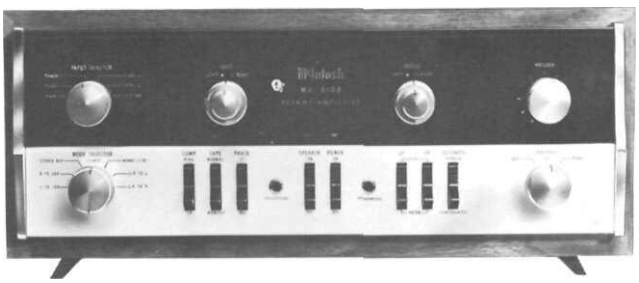
Now the MA 5100 gives you Mclntosh performance and quality in a combination solid state preamplifier and solid state power amplifier.

There are 51 solid state devices used in the MA 5100. The preamplifier section uses 16 transistors. The power amplifier uses 18 transistors. An additional 17 solid state devices, diodes, zener diodes, and rectifiers are used in the MA 5100.

The stereo preamplifier has the lowest hum and noise of any combination unit. The square wave rise time is 3 microseconds (a microsecond is a millionth of a second). There is no ringing present. The distortion of the Mclntosh silicon planar solid state pre-

amplifier at its rated output is 1/10 of 1%. All these features (coming to you) give you the sound of real live music in your home.

The silicon rectifier power supply gives instant voltage to the amplifier when needed. Recovery from the loudest musical passage is immediate. Your music sounds alive and thrilling played through the MA 5100.



Features:

Three high level inputs: Aux, Tape, Tuner. Three low level inputs: Phono 1, Phono 2, Tape Hd. Separate Bass and Treble Controls. The Bass and Treble controls are continuously variable. There are also low impedance headphone jacks on the front panel. There is a speaker "on-off" switch on the front panel. By connecting your headphones to the headphone jacks, and switching the speaker "on-off" switch to off you can enjoy your stereo in complete privacy. Two record equalizations, RIAA or LP, take care of your record listening needs. A tape monitor switch makes it easy to compare tape recordings in progress. Low frequency cutoff at 50 cycles eliminates turntable noise or acoustic feedback. A high frequency cutoff of 5,000 cycles minimizes record scratch or hiss from tapes. A phase switch gives you control of the program phase. A loudness switch makes music sound full and rich even at low listening levels.

The MA 5100 is the answer for the owner who wants the best in a power amplifier, the best in a preamplifier in the smallest space.

MA **5100 Specifications**

Power Output

45 watts continuous per channel with both channels operating simultaneously. 90 watts continuous, monophonic

HarmonicDistortion

Less than 1/4 of 1 % at 45 watts, output, 20 through 20,000 cycles

Intermodulation Distortion

Less than 1/4 of 1% for any combination of frequencies from 20 cycles through 20,000 if instantaneous peak power is 90 watts per channel or less

Frequency Range

At 45 watts output, both channels +0, — 0.5 20 cycles through 20,000 cycles + 0, — 3db 12 cycles through 80,000 cycles

Output Load Impedance

Matches all loudspeakers 4 to 16 ohms

Internal Impedance/Damping

Less than .01 % of rated load impedance; damping factor of 117

Noise (Including Power Amplifier)

High level inputs; 75db below rated output
Low level inputs; 75db below rated output with 10 millivolt input signal

Front Panel

16" wide x 5-7/16" high x 13" deep

Weight

Chassis only, 25 pounds
In shipping carton, 38 pounds