McIntosh

BEST PERFORMANCE

GREATEST MUSICAL SATISFACTION

LONGEST PROTECTION

HIGHEST RELIABILITY

RIGOROUS QUALITY CONTROL

METICULOUS MANUFACTURE

PAINSTAKING ENGINEERING

LONG LIFE STYLING

HIGHEST VALUE AT TRADE TIME

mcintosh laboratory inc, 2 chambers street Binghamton, new york 13903

McINTOSH PROTECTION

FIRST PROTECTION....

In these dark days of hurry up - percertage analysis - product on rush - *and limited personal responsibly* the McIntosh policy of 'Performance Limits' is a bit of bright blue sky Every McIntosh instrument - - every one - - is tested to be equal to or better than the performance limits advertised. When a performarce limit of 0.02% harmoric distortion is established for an instrument. McIntosh means that every, each, all of the instruments manufactured must be capable of performance to that limit - or better - - or your full purchase price will be refunded

Here is one of the reasons McIntosh can make this promise at McIntosh every product is 100% tested for maximum performance. We are net content knowing that 10% of our prcducts are tested and meet the performance requirementsestablished by our engineer ing group. We must know that every one meets its requirements. This rigorous pursuit of excellence takes time at McIntosh more time mears more care, mere protection for you. There's no production rush at McIntosh.

The McIntosh irvestment in professional testing instrumertsis staggering On 3 percentage basis McIntosh probably invests more of its sales dollars in testing facilities that anyone else in a like business. For instance. McIntosh has one professional distortion analyzer for every 10 employees. This kind of statistic is repeated for all sorts of test instruments As new testing instruments are procuced that update the McIntosh ability to mow. McIntosh invests in them - - wave form analyzers - real time analyzers - lowest distortion signal generators - etc., etc. Even an FM transmitter so that the entire transmission/reception system can be analyzed.

'What does this mean to me' you ask. Only through this impressive investment; through continuous testing and research; through product analysis and endless measurement can we promise and deliver to you reliability. *longlife, performance highest value,* and freedom *from service.*

SECOND PROTECTION...

McIntosh Laboratory has great belief in its engineer ing product development, manufacturing and quality control. To offer you strong evidence of this confi dence McIntosh offers you 3 FREE SERVICE CONTRACT. During the life of the contract you cant spend one dime for service. McIntosh guarantees tabor. It costs you nothing The extended life of a McIntosh, the conservative ratings, and the sophisticated appearance make 3 McIntosh instrument a greater value when you are ready to trade Step up to McIntosh now.

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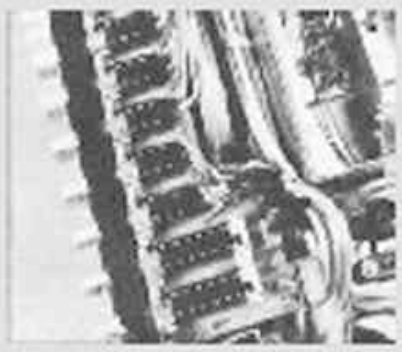
Prees and designs subject
to change without net ce

THE BEST -stereo

Tune weak, distance stations next to strong local stations easier. A seven section variable capacitor is the heart of the RF section Four sections are used for FM and three for AM By interleaving (FM-AM-FM-AM. etc.) spurious responses are significantly reduced and selectivity is substantialy Improved.



Excellent flexibility makes the MAC 1900 easier to set up. Pushbuttons are provided for your choke of any mode of operaton. Use two tape recorders 3 stereo speaker systems, seven modes of operation plus loudness compensation, muting, high and low filters.

Each cannel of the preamplifier is assambled on a plug-in high grade, low noise printed circuit card, A large quantity of negative feeaback around the pnono amplifier reduces noise and distortion and provides precison RIAA compensation for records.

A new Mcintosh engineering develop-ment has produced an AM circuit that has equal sensitivlty across the entire band. Selectivity and image rejection have been maximized across the band. A patent application has been made for this new and superior AM tuner circuit.

Use and hear AM as never before. The MAC 1900 has a hign Quality loop-sick AM antenna. It can be rotated for maximum performance, optimum signal reception and minimum Interference. Each MAC 1900 loopsack is tuned for optimum perfomarce. Custom matching maximizes performance. You can mount the receiver in any postion without the sacrifice of sensivity.

There's more real power and more protection. The power transistors are mounted on oversized black anodized heat slnks. Under normal operation the transistors will operate at low temperature. The power transistors used in the output circuits are selected for their high power dissposition capability, wide frequency respense and large 'safe operating area.'

FM

A dual insulated gate metal oxide slicon field effect transistor (MOS-FET) is used as the first and second RF amplifier. The MOS-FET greatly reduces the cross-mod-ulation products over a wider dynamic range. Wider dynamc range permits acceptance of up to 12 RF volts without overload or increased distortion!

The dual *QUAD-TUNED* IF filter has unusual adiacent channel selectivity and low distortion. The *QUAD-TUNED* IF filter has equal time delay in its pass band region. All other IF filters have delay distortion, as much as 100% of the 10.7 MHz transit delay. The MAC 1900 has less then 1.0% delay distortion from antenna input to discriminator output! You get overal lower distortion performance.

A particular advartage of the McIntosh multiplex circuit is the elimination of the critical adjustment in commonly used circuits The L—R sidebands are detected then auto matically matrixed with the L+R carrer. This yields the left and right program with maximum separation!

Ultrasonic muting makes FM tuning easier. FM muting operates by detecting ultrasonic noise which is present between stations or when receiving a weak station.

AM

The NEW. superb AM circuit design has linear senstivity and linear frequency response over the entire AM band The NEW AM circuit has high sensitivity and excellent dy-namic range. The NEW AM circuit will not be overloaded by strong local stations yet is sensitive enough to receive distant and weak stations with minimum noise. Response has been carefully tailored to deliver maximum quality with minimum noise.

"The high sensitivity ferrite loopstick antenna is carefully tuned and trimmed to match each MAC 1900. After the individual matching process, the antenna is sealed to preserve the superior performance introduced by individualized matching. McIntosh has revived the lost art of designing superb AM.

PREAMPLIFIER

The preamplifier is an outstanding example of what the electronic designers have done to provide for highest quality with great flexibility in a space limited housing. It has unusually low noise and low distortion. For instance, you can play, record, and monitor on two tape recorders

POWER AMPLIFIER

The low distortion and stability of the MAC 1900 power amplifier circuit allows it to be used wth any dynamic or electrostatic speaker system. McIntosh output circuit with instantaneous current limiting totaly protects you. This reserve power and complete protection allows safe oper-ation with as many as three pars of speakers, indvidually or all together! You have front panel switching for three stereo loudspeaker systems of any type!

RECEIVER IS THE MAC 1900

you get more value

you get more protection from service costs

you get more electronic protection

you get more real power

you get more useful flexibility

you get more results from new technology

you get more pure pleasure

AM-FM/FM STEREO RECEIVER
Shown in walnut veneer cabinet

TWO YEAR SERVICECONTRACT

To make the value even greater. buy a McIntosh Audio product and get a free 2 YEAR SERVICE CONTRACT! An outstanding feature of the McIntosh Service Contract is the protection you get. Normal wear and tear as well as any manufacturing defect costs you rothing.

Read about the Guaranteed Performance of the

MAC 1900

MAC 1900 Performance Limits

PREAMPLIFIER AND POWER AMPLIFIER

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

POWER OUTPUT.

55 watts minimum sine wave continuous average power output, per channel, both channels operating into 8 ohms oad impedance, which is:

21.0 volts RMS across 8 ohms

30 watts minimum sine wave continuous average power output, per channel, both channels operating into 16 ohms load impedance, which is:

21.6 volts RMS across 16 ohms

40 watts minimum sine wave continuous average power output, per channel, both channels operating into 4 ohms load impedance, which is:

12.65 volts RMS 3cross4 ohms

OUTPUT LOAD IMPEDANCE:

4 ohms. 8 ohms, or 16 ohms

RATED POWER BAND:

20 Hz to 20.000 Hz

TOTAL HARMONIC DISTORTION:

0.2% maximum harmonic distortion at any pow er level from 250 milliwatts to rated power per channel from 20 Hz to 20.000 Hz. both channels operating

IINTERMODULATION DISTORTION:

0.2% if instantanous peak power output is twice rated continuous everage power or less per channel with both channels operating for any combination of frequencies 20 Hz to 20.000 Hz

FREQUENCY RESPONSE: (at one watt output)

23 Hz to 20.000 Hz -0.5 -0,5 dB

NOISE AND HUM:

Power Amplifier, 95 dB below rated output
Tape input: 90 dB below rated output
Phono input: 76 dB below 10 mV Input

DAMPING FACTOR:

56 at 8 ohms output
112 at 16 ohms output

INPUT SENSITIVITY AND IMPEDANCE:

Power Amplifier: 2,5 volts. 100.000 ohms
Phono 1 and Phono 2: 2,0 mV. 47.000 ohms
Tape1 and Tape 2: 250 mV. 250.000 ohms

TAPE OUTPUT

Tuner. 10 volt at 100% modulation (FM)
Tape: 260 mV with rated Input at 600 Hz
Phono: 1,2 volt with 10 mV Input at 1000 Hz

BASS CONTROLS:

±18 dB at 20.000 Hz

TRE BLE CONTROLS :

±16 dB at 20.000 Hz

LF FILTER:

Active filter. 12 dB per octave roll off below 50 Hz. down 18 dB at 20 Hz

H.F. FILTER:

Actve filter. 12 dB per octave roll off above 7.000 Hz. donwn
13 dB at (20.000 Hz

AM

SENSITIVITY:

75 mV (external ant.)

SIGNAL TO NOISE RATIO:

45 dB minimum: 55 dB at 100% moduation

HARMONIC DISTORTION:

Will not exceed 1% at 30% modulation

ADJACENT CHANNEL SELECTIVITY:

30 dB minimum

IMAGE REJECTION:

65 dB minimum. 540 kHz — 1600 kHz

FM

USEABLE SENSITIVITY

2,6 microvolts at 100% modulation (±76 kHz deviation) for 3% total noise and harmonic distortion

SIGNAL TO NOISE RATIO:

70 db below 100% modulation

HARMONIC DISTORTION:

Mono: Does not exceed 0,3% at 100% modulation ±7,5 kHz deviation: stereo: Will not exceed 0.7%

AUDIO FREQUENCY RESPONSE :

±1 dB 20 Hz to 16,000 HZ with standard Ce-emphasis (75 m8) and 19.000 Hz pilot filter

CAPTURE RATIO:

1,8 dB

SELECTIVITY :

55 dB alternate channel selectivity minimum

SPURIOUS REJECTION:

90 dB minimum

IMAGE REJECTION:

80 dB:88 to 108 MHz (IHF)

STEREO SEPARATION:

34 dB at 1.000 HZ

SCAFILTER:

60 dB rejection from 67 kHz to 74 KHz. 276 dB per octave slope

FACILITIES AND FEATURES

BASS:

slide control with mechanical detent for flat—16 dB to +I6 dB at 20 Hz

TREBLE:

Slide control with mechanical detent for flat—16 dB to +16 dB at 20.000 Hz

LOUDNESS:

Pushbutton ... for loudness compensation or flat response

BALANCE:

Natural balance at center position, attenuation of left or right channel by rotating control

VOLUME:

Precision "tracked" at all listening levels. (0 to — 65 dB) Does not change stereo balance as loudness Is charged. The Ac power ON/OFF switch Is coupled with this control.

INPUT:

SIX positions—TAPE 1. TAPE 2. AM. FM. PHONO 1 and PHONO 2

MODE:

Pushbutton—Left channel only to both speakers Right channel only to both speakers stereo reverse, stereo mono: (L+R). L-R to right speaker only, and L-R to left speaker only

TAPE MONITOR;

Two pushbutton switches. Either of two tape recorders can be monitored by selecting the TAPE MONITOR 1 pushbutton or TAPE MONITOR 2 pushbutton. They are mechanically interlocked to accept only one pushbutton at the IN position at one time

speaker:

Main—switch the MAIN loudspeaker system ON or OFF without affecting the performarmance of remote speakers.

Remote 1 —Switch one REMOTE loudspeaker system ON or OFF without affecting performance of mainspeaker system.

Remote 2—Switch a second remote loudspeaker system ON or OFF without affecting the performance o' MAIN speakers.

HEADPHONE JACK:

For listening with low impedance dynamic stereo headphones

GENERAL

POWER REQUIREMENTS:

120 volts. 50/60 Hz. 40 watts at zero signal output. 300 watts at rated output

SEMICONDUCTOR COMPLEMENT:

63 silcon field effect of bipolar trarsistors
3 integrated circuits
4 thyrisistors
39 silicon rectifiers and diodes

MECHANICAL

Size:

Front panel measures 16 inches wide (40,64 cm) by 6-1/2 inches high (13.97 cm) chassis measures 16 inches wide (38,1 cm) by 6-1/b inches high (13,02 cm) by 16 inches deep (38,1 cm) including back panel connectors Krob clearance recquired is 1 -1/2 inches (3,81 cm) in front of the mounting panel

FINISH:

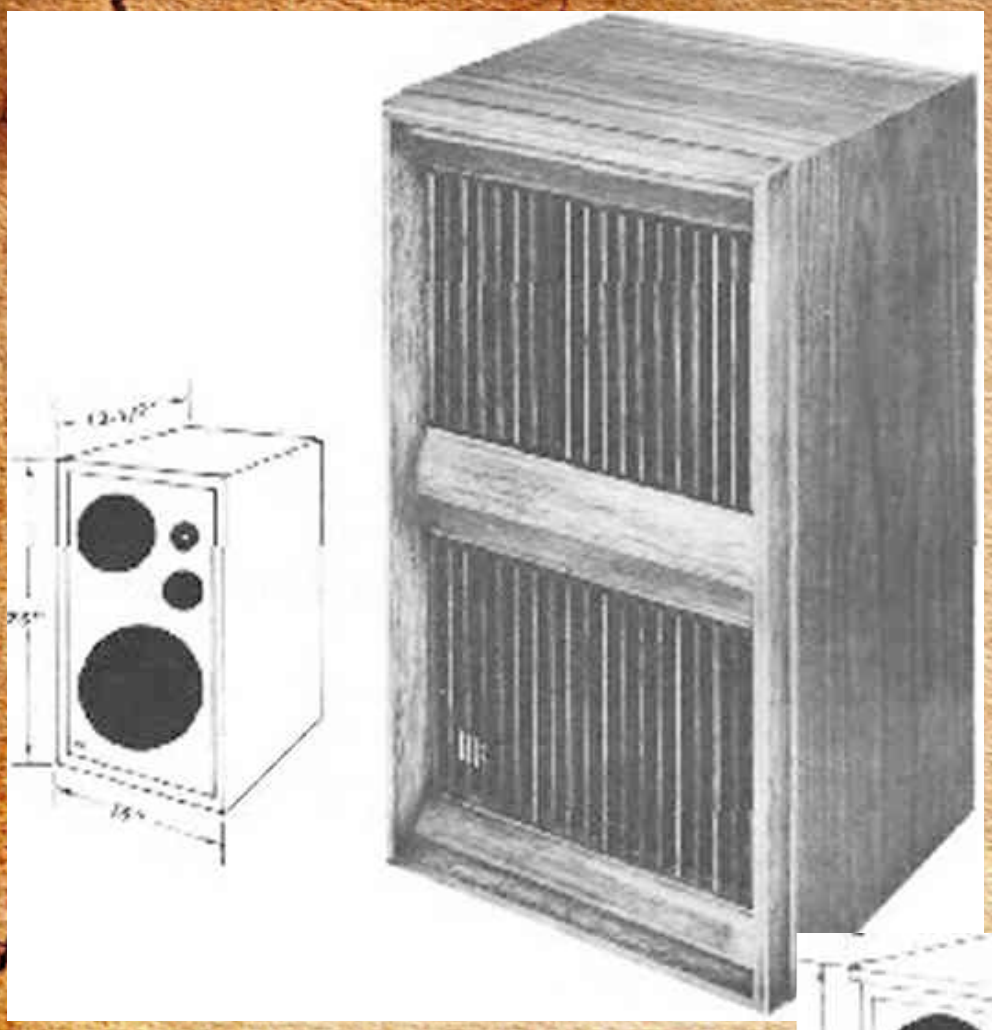
Front panel is anodized gold with black

WEIGHT:

33 pounds (14.97 kg) net 46 pounds (20.87 kg) in shipping carton

McINTOSH is

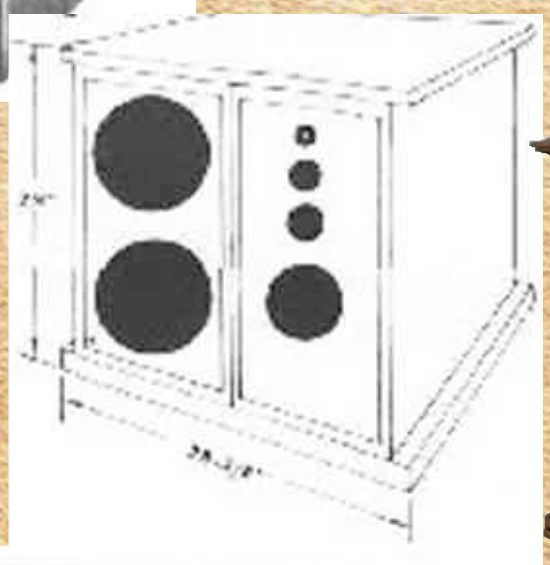
THE SOUND OF REALITY



HERE'S BEAUTIFUL

ML 1C
I- 10‘ (25.4cm) Radiator -12“ {3D.48cm}
Loudspeaker
1 - 5* (12.7 cm) Radiator - 8' (20.32 cm
Loudspeaker
II-1/2’ (3.81 cm: Dome Radiator
1 - Coaxial Super Radiator

Cabinet: is particleboard construction us*ing* genuine walnut veneers. Front panel has a matching walnut finsh on selected hard-wood solids. Decorative grilles have a simulated walnut finish on the front surface of polystyrene moldings.



ML2M
2 - 10* (25.4 cmj Radiator - 12’ {30.48 cm)
Loudspeakers
1 - 5“ <12 7cm) Raclator-3' (23 32cmi
Lcucspeaker
2 - 1-1/2’ (3.81 cm) Come Radiators
1 - Coaxial Super Rad ator

Cao net :s patic etoard consrvctlcr usrg genu re pecan vereers and selected rard-woed sends. Frcrt panels nave a mater rg pecan f msn cr a rig d po yjreatnare rold-irg.

ML2C
2-10” (25.4cm) Radiator - 12” (30-48 cm) - Loudspeakers
1 - 5“ {12.7 cm) Radiator . 8” (20.32cm) Loudspeaker
2- 1-1/2’ (3.81 cm) Dome Radiator
1 -Coaxl Super Radiator

Cabinet is particleboard construction using genuine walnut veneers and selected hard-wood solids. Front panels have a matching walnut finish on selected ha-rdwood solids. Decorative grilles have a simulatec walnut finish on the front surface of polystyrene moldings.

With Your McIntosh Loudspeakers Use The....

MCINTOSH ENVIRONMENTAL EQUALIZER
FOR THE SOUND OF REALITY IN YOUR LISTENING ROOM

MQ 101 — Shcwr in walnut veneer cabinet

In McIntosh loudspeakers, the characteristics of the speaker enclosure (cabinet) ard of the loudspeaker have been combined to produce near perfect transient response. The design for excellent transiert response must compromise the system's low frequency response The most effective way of restoring flat low frequency response is the use of an electrically equalized speaker input signal. Mcintosh Environmental Ecualizers do that job

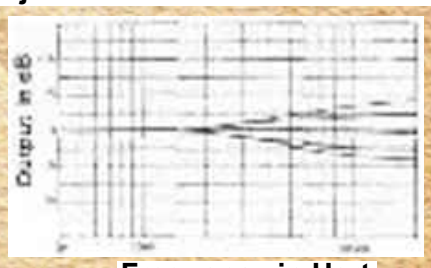
A switch selects from the five different high frequency equalization curves High frequency cortrol permits the tailoring of the response of the entire system to compensate for room characteristics such as large areas of glass and large areas of plaster.

A switch selects from five different mid-frequency equalization curves. Mid-frequency centre! permits the tailoring of the response of the entire system to compensate for room furnishings and room acoustics.

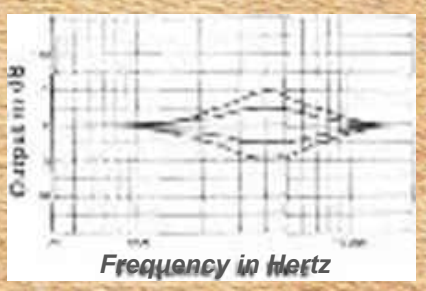
The MG 101 McIntosh Environmental Equalizer is 3 three band equalizer divided into low frequencies, mid-frequencies and high-frecuencies

A concentric switch selects from five different low frequency equalization curves incependently in each channel. In addition to restoring flat response the low frecuency equalization is used to compensate fer the placement cf loudspeakers in the listening room.

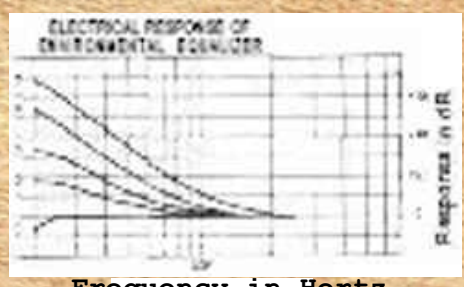
SIZE; Front panel: 10 inches wide (40.64 cm) by 2-15/16 inches high (7.46 cm). Chassis: 15 inches wide (38.1 cm) by 13 inches deep (33.02 cm) inclucing PANLOC shelf and back panel connecters; Knob Clearance: 1-1/2 inches (3.81 cm) in front of mounting panel.



Frequency in Hertz



Frequency in Hertz



Frequency in Hertz

MQ102

The McIntosh MQ 102 is 3 single hand ecualizer that compensates below 150 Hz. The performance and operation are identical to the MG 101 low frecuercy compensation abilities.

SIZE Chassis measures 6-3'4 inches wide (17.15 cm) by 2-1/2 inches high (6.35 cm) by 4-1/8 inches deep (10.48 cm). Knob clearance recuired is 1-1/2 inches (3.81 cm).

Conventionally designed loudspeakers should not be used with a McIntosh Environmental Equalizer since it will overdrive them, the result will be increased distortion and decreased life expectancy of the speaker. Conversely, McIntosh loudspeakers should not be used without the McIntosh equalizers, they are designed to produce the low intermodulation characteristics and proper frequency balance which, is so important to McIntosh sound-the SOUND of REALITY.

Performance - flexibility - long trouble free life - describe the

C-26 PREAMPLIFIER

Performance Limits

BASS

Separate 11 position rotary switches for each channel. 20 dB t**o** +16 dB **at** 20 hz.

TREBLE:

Separate 11 **position rotary switches for each channel. -20 dB to +20 dB 3t 20.000 H2.**

LOUDNESS:

Flat response. or continuously variable loudness equaliza -tion as volume level is reduced.

TAFE MONITOR:

Two pushbutton switches. Eitrer of two tape recorders can be monitored by selecting the TAPE 1 pushbutton or TAPE 2 pushbutton. They are mecnanically interlocked to accept only one pushbutton at the IN position at one time.

LF FILTER (Rumble Filter):

Flat **or roll-off 6 dB per octave below 50 Hz. down** 12 **dB at** 20 **Hz**

HF FILTER (Scratch Filter):

Flat or roll-off 6 dB per octave above 6.000 Hz. down 12 dB at 20,000 HZ.

SPEAKER:

Main **- Swltch the** MAIN **loudspeaker system** ON **or** OFF **without affecting the performance of** REMOTE **speakers. Remote - Switch the** REMOTE **loudspeaker system** ON **or** OFF **without affecting the performance of** MAIN **speakers.**

HEADPHONE JACK:

For listening with low impedance dynamic stereo head phones. Power to this jack is supplied when the output of the amplifier is property connected to the C 26.

CENTER CHANNEL LEVEL

Top of chassis control to adjust the output level of the left plus right program material at the CENTER CHANNEL output on the back panel.

PHASE CONTROL:

Electronically reverse phase In tne left channel to correct *out of phase' program sources.

FREQUENCY RESPONSE +0. -0.5 dB 20 Hz to 20.000 Hz

DISTORTION: Will not exceed 0.1% at any level up to 2.5 volts output. 20 Hz to 20.000 Hz.

INPUT SENSITIVITY AND IMPEDANCE:

Auxiliary. Tuner. Tape 1. Tape 2. 0,25 volts at 250.000 ohms Phono 1 and Phono 2,2 millivolts at 47.000 ohms (1,000 Hz).

HUM AND NOISE

Auxiliary. Tuner. Tape **1.** and **Tape 2. 85 dB** below rated output. **Phono 1. Phono 2. 74 dB** below **10** millivolts input, equivalent to less than **2** microvolts at the input terminals

OUTPUT LEVEL AND IMPEDANCE:

Main Output: 2.5 volts with rated input. 200 ohms source impedance, to operate into 47.000 ohms or more Tape Output: 0.25 volts, 200ohms source impedance.from low level inputs to operate into 47,000 ohms or more. Center Charnel Output: (L + R) 2.5 volts with rated input to both channels. 1.200 ohms source impedance, to operate into 47.000 ohms or more A level cortrol adjusts the center channel output from +6 dB with respect to Main output.

AMPLIFICATION IN DECIBELS

Auxiliary. Tuner. Tape 1 and Tape 2 to Main Output 20 dB; to Tape Output 0 dB: Phono 1 and Phono 2 (at 1.000 Hz); to Main Output 62 dB: to Tape Output 42 dB.

SEMICONDUCTOR:

18 silicon planar transistors. and 3 silicon diodes

POWER REQUIREMENT:

120 volts. 50/60 Hz. 15 watts.

MECHANICAL

SIZE: Frontpanel 16 inches wide (40.64 cm) by 5-7/16 inches high (13.81 cm). Chassis: 15 inches wide (38.1 cm) by 5 inches high (12.7 cm) by 13 inches deep (33.02 cm) including PANLOC mounting brackets and back panel connectors. Knob clearance required as 1-1/2 inches (3.81 cm) in front of the mounting panel.

-INISH: Front panel is anedized gold and black with special McIntosh gold/teal panel nomenclature illumination

CHASSIS: black.

MOUNTING: McIntosh developec professional PANLOC.

WEIGHT: 18 pounds (8.16 kg) net. 33 pounds (14.97 kg) in shipping carton

THE McINTOSH C28 STEREO PREAMPLIF

EASIEST TO USE- - MOST ADVANCED

McIntosh engineers could not be content with just another preamplifier. New concepts and new technology have produced a preamplifier that gives you the greatest flexibility ever Look at the great number of ways you can enjoy the C 28……

- **Use 3 tape machines**
  2 with their own electronics and 1 tape playback deck with complete easy front panel switching

  Built-in Headphone Amplifier
  listen to your favorite music - - - privately

- **Main and Remote Loudspeaker Switching**
  turn the main speakers on or off without affecting the remote speakers and vice versa (operates with accessory relay).

- **New Low Noise Phono Input**
  lister to your records with a new quietness

- **Individual Channel Phono Level Controls**
  match levels from different phono cartridges without degrading signal to noise ratio

- **Individual Channel Output _evel Controls**
  perfect balance from your stereo always

- **Individual Channel Tone Control Switches**
  complete, repeatable flexibility

- **NEW Compensation Control**
  one position for loudness compensation, one position is flat and (NEW) a third position that adds presence compensation!

NEW LOW NOISE PHONO CIRCUITS

New records and tapes with greatly increased dynamic range demanded new low noise circuits. McIntosh scientists developed a new DIFFERENTIAL INPUT CIRCUIT that reduced phono input noise levels from approxmately 2.4 microvolts in an excellent preamplifier to a new level of only 1.2 microvolts! The differential input circuit has only been used in very sensitive professional test equipment and in medico-electronics. The preamplifier will not overload or change distortion for any phono input signal from 2 millivolts up to 500 millivolts This represents a dynamic range of approximately 3000 to 1 on a voltage basis. This fantastic improvement necessitated extreme care in layout and manufacturing. The signal circuits need careful shielding and wiring with coaxial cable to prevent noise and crosstalk in the preamplifier from destroying the low noise of the input circuit.

NEW TAPE **FLEXIBILITY**

With the C 28 you can copy from one tape recorcer to another while listening to a completely different program! In addition, you can monitor the recording by simply push-ing a button and an input circuit has been provided to accept the signal from a tape playback deck

You can use three tape machines with the C 28. There are front panel jacks that permit the use of the third tape recorder. When plugged into the front panel jacks the tape recorder connected to Tape Recorder 2 is automatically disconnected and the controls provided are used with the third tape recorder.

NEW HEADPHONE AMPLIFIER

Use your headphones for private listening. Ample power has been provided to power todays high quality low impedance dynamic headphones, plus a separate power switch in the preamplifier turns the power amplifiers on or off. It is not necessary to operate the power amplifiers while listening to headphones.

IER IS THE QUIETEST- -MOST FLEXIBLE - - AND HAS THE LOWEST DISTORTION!

Performance Limits

FREQUENCY RESPONSE
+0-0.5 dB 20 HZ to 20.000 HZ

DISTORTION
Will not exceed 0.1% at rated output level. 20 Hz to 20.000 HZ.

INPUT SENSITIVITY AND IMPEDANCE:
Auxiliary. Tuner, Tape 1. Tape 2. 0.25 volts: 250.200 ohms
Phono 1 and Phono 2,2 **millivolts; 47,000 ohms (1,000 Hz).**
Microphone. 2.5 millivolts; 500.000 ohms.
Tape Head. 2 millivolts: 502.200 onms (502 Hz).

HUM AND NOISE
Auxiliary. Tuner. Tape 1. Tape 2: 90 dB beiow rated output. Phono 1. Phono 2 and Tape Head; 78 dB below 10 millivolts input, equivalent to less than 1.2 microvolts at the input terminals. Microphone: equivalent to less than 1.5 microvolts at the Input termnals.

OOTPUT LEVEL AND IMPEDANCE:
Maim Output: 2.5 volts with rated input. 102 ohms source impedance, to operate into 47,000 ohms or more. Tape Output: 0.25 volts. 150 ohms source impedance, from low level inputs, to operate into 47.000 ohms or more Headphone,'une Output: 0.75 vots into 8 ohm load or 2.5 volts nto 600 ohm line. 0.2 ohm source impedance. Center Channel Output: 1.25 volts with rated input to both channels, to operate into 47.000 ohms or greater

AMPLIFICATION N DECIBELS:
Auxiliary, Tuner. Tape 1 and 2 to Main Output: 20 dB: to Tape Output: 0 dB: to Headpnone/Line Output 17.5 dB. Phono 1 and Phono 2 at 1.000 Hz to Main Output: 62 dB; to Tape Output: 42 dB: to Headphone.'Line Output 59.5 dB Microphone: to Main Output: 60dB; to Tape Output: 40 dB; to Headphone/Line Output: 57.5 dB Tape Head at 500 hz; to Main Output: 64 dB: to Tape Output: 44 dB: to Headphone/Line Output: 61.5 dB

POWER REQUIREMENT:
120 VOltS. 50/60 HZ. 45 watts.

FACILITIES AND FEATURES

BASSCONTROLS:
11 position rotary switch in each channel. ± 20 dB at 20 HZ.

TREBLE CONTROLS:
11 position rotary switch in each cnannei. ± 18 dB at 20.000HZ.

COMPENSATION SWITCH
”Three position switch for Flat, loudness. or Presence. Loudness position boosts low frequencies for low level listenlng. Presence posit on boosts mid frequencies 4 dB to increase 'presence’ effect.

VOLUME CONTROL:
AC power ON/OFF swttch is coupled with this control.

MODE SELECTOR:
Seven positions: Left channei only to both speakers. Right channel only to both speakers. Stereo Reverse, Stereo. Mono, L + R to left speaker only, and L + R to right speaker oniy.

TAPE MONITOR SWITCHES:
Either of two tape recorders can be monitored by use of either the TAPE 1 or TAPE 2 pushbutton.

TAPE COPY SWITCH:
Provides switching to copy from tape machine 1 to tape machine 2 or vice versa without affecting the program being heard.

LF FILTER SWITCH (Rumble Filter):
Flat or roll-off at 12 **dB per octave below 50 hz. down 18 dB at 20 HZ.**

HF FILTER SWITCH (Scratch Filter):
Flat or roll-off at 12 dB per octave above 7.000 Hz. down 18 dB at 20,000 HZ.

SPEAKER SWITCHES (Operates with accessory relay):
Turn the main speakers on or off without affecting the remote speakers and vice versa

HEADPHONE JACK:
Power to this Jack is supplied by an amplifier provided in the C 28.

LOW FREQUENCY TRIM CONTROLS.
use to compensate for unequal speaker response or the unequal influence of room acoustics.

PHONC 1 AND PHONO 2 LEVEL CONTROLS:
Provides for optimum signal to noise ratio and proper balance of the channels of the pnono cartridge.

OUTPUT LEVEL CONTROLS:
Permits presetting the balance of the entire system.

HEADPHONE LEVEL CONTROLS:
Adjusts the output of the headphone/line ampliflier output.

TRANSISTOR COMPLEMENT:
26 silicon- transistors. 4 silicon diodes. 2 silicon planar bridge rectifiers

MECHANICAL

SIZE:
Front panel measures 16 inches wide (40.64 cm) by 5-7/16 inches high (13.81 cm). Chassis measures 15 inches wide (38.1 cm] by 5 inches high (12,7 cm) by 13 inches deep (33.02 cm) including PANLOC mounting brackets and back panel connectors. Knob clearance required is 1-1/2 inches (3 81 cm) in front of the mounting panel.

FINISH:
Front panel is 3ncdized god 3nd ciac< with sped* gold/ teal nomenclature illumination cnassis is Diaci.

MOUNTING:
Exclusive Mdntosn developed professional =>ANLOC.

WEIGHT:
25 pounds (11.34 kg) net. 37 pounds (16.78 Kg) in shipping carton.

Speaker Control Relay

SCR 2

The Mcintosh Speaker control Relay is designed for use with the McIntosn C28 Stereo Preamplifier. The SCR 2 provides for remote control of both the AC power to a remote amplifier and the on/off control of the Main and Remote loud- speakers. Control for the SCR 2 is provided by pushbuttons and a low voltage supply in the C 28

SIZE: Chassis measures 6-3/4 inches wide (17,15 cm) by 2-1/2 inches high (6.35cm) by 4-1/8 inches deep (10.48cm). Terminal clearance required is 1-1/2 inches (3.81 cm)

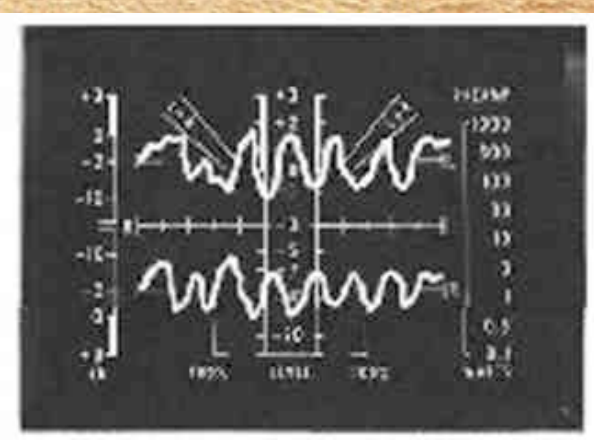
THE MCINTOSH MPI4 MAXIMUM

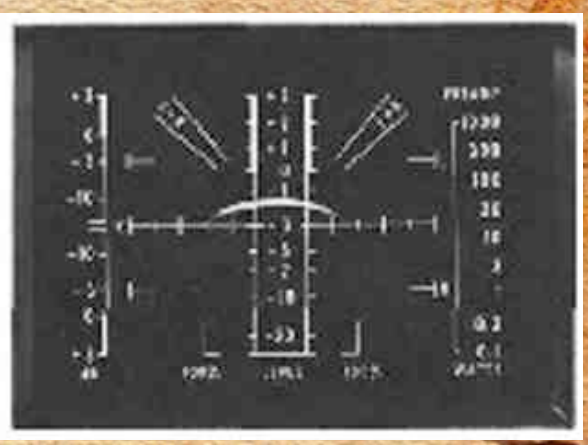
The MPI 4 helps you get

- *max/mum performance from your stereo system*
- ***a v/ew of the separation provided on any signal source***
- *absolute balance of your stereo channels from phono cart*

PHONOCARTRIDGE CALIBRATION

You will protect your record invest - ment extend the life of your recorcs, and reduce needle wear when the turntable is property set up. With the aid of test recordings the MPI 4 will assist in this proper set up. The display assists in properly adjusting for proper tracking force, best tracing vs tracking force, anti-skate. proper phasing, and channel separation.





PHASE

Program material that is 'out of phase' sounds unnatural and thin: In phase' sounds alive and rich. Occasionally a pro gram source will be 'out of phase.' On the MPI 4 you can see the phase relation ship so you can correct the condition.

DUAL TRACE

Each channel of stereosignal is display -ed individually in the dual trace mode of operation. Comparison of the signals assists in comparison of recordings, the quality of stereo information in the source and much other valuable information.

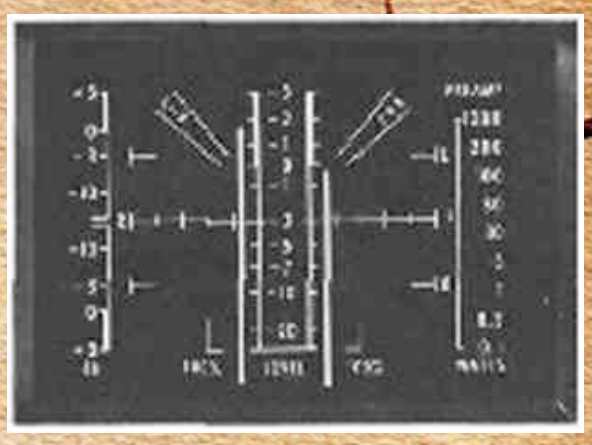
FM TUNING

You'll see sigral strength. center chanel FM tuning and a reference for multipath distortion elimination The image is a display of the tuner IF curve. Signal strength is the vertical axis. Horizontal center is the center of the detector and IF curves. Proper tuning gives minimum distortion and maximum listening pleasure to ail kinds of FM broadcasts.

PERFORMANCE INDICATOR

- *better FM reception*
- *"once in a lifetime"programs flawlessly recorded*
- *a measurement of the performance of the phono cartridge*

ridge to speakers · accurate measurement of power output

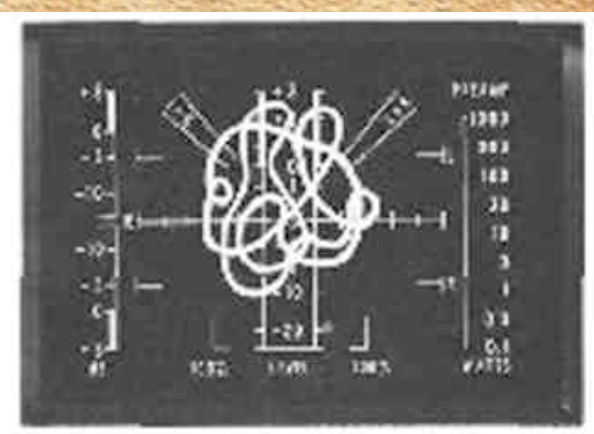


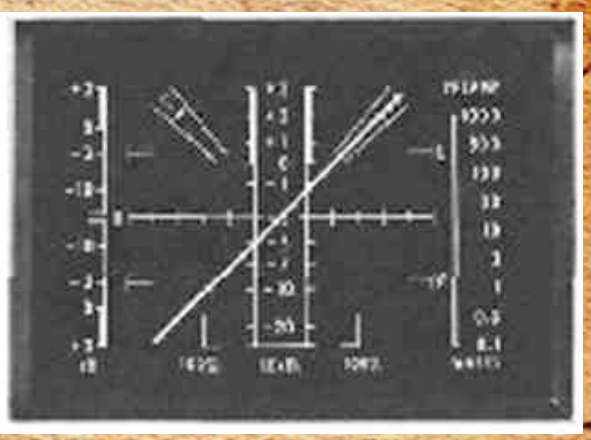
LEVEL

The audio level of stereo signals is displayed as two vertical columns on the screen The height of each column is determined by the power or amplitude of the input signal

Action can be stepped and held to permit close comparison between the highest levels attained by left and right channels.

Shown in walnut vereer cacinet





MULTIPATH DISPLAY

Multipath reception deprives you of FM listen ng enjoyment in several ways:

- **noise level increase**
- **distortion is introduced into the program material**
- **stereo separation is reduced**
- **the stereo effect may be completely lost**
- **stereo indicators may fall to function**

CHANNE. SEPARATION

The MPI 4 shows the stereo separation from all stereo program material. The display changes positon and shape with the program material to permit interpretation of what the display means to your listen - ing enjoyment. You see what makes a good stereo record sound good. You will know why your records sound the way they do.

BALANCE

Accurate system balance assures you of full stereo pleasure. The MPI 4 gives you a visual indcation of the balance of your stereo system. You can check and correct the output balance of your stereo phono cartridge, tape recorder. tuner, or any part of your stereo system. You will knew when your stereo system is in balance when you use an MPI 4.

THOROUGH, UNINHIBITED RESEARCH HAS DEVELOPED THE NEW TECHNOLOGY NECESSARY FOR A TRULY LOW DISTORTION FM TUNER WITH VARIABLE SELECTIVITY.....

THE McINTOSH MR 78!

McIntosh research is a continuous program of exploration for new technology that permits performance improvement and greater value for you. This unrestricted research program developed the new technology necessary for the realization of these new design concepts for the MR 78.

THE DISTORTIONLESS IF FILTER

Ever since the beginning of FM. research engineers have realized that constant delay IF filters (equivalent to linear-phase) were necessary for low distortion reception. Crude approximations to constant delay have always been used in FM tuners - with disappointing results. Sc-called 'Butterworth* or 'Legandre filters offer only a fair compromise with respect to delay error. Crystal and ceramic filters, usually based on the "Chebychev" model, work fairly well and give good selectivity, but. none of these are constant delay (linear-phase) filters. Commercial tuners using these filters can show 5% stereo IM distortion at 100% modulation. The filters used in todays tuners can have delay errors up to 100%! The IF filter in the MR 78 has a delay error less than 1% from antenna input to discriminator output! In its useful bandpass, it is a true mathematical approximation to linear-phase - the world's finest selective. linear-phase. minimum-phase shift filter.

A FORTRAN computer program using an algorithm that took six years to develop was used in its design. The mathema-tical complexity of the filter design procedure is almost beyond belief. Using a process called 'numerical integration in the complex S-plane.* a high speed IBM 1130 computer spent eighteen minutes on the design of the IF filter. A human engineer, working twenty-four hours a day and seven days a week, would have taken 300 years to finish this work . . . assuming he made no mistakes!

LINEAR PHASE BRIDGE DISCRIMINATOR

The excellence of the IF filter would be useless if it had to work into an ordinary FM detector. Thus a new detector with suitably low distortion had to be developed. A search of the available literature revealed a little-known bridge circuit with a theoretical distortion of zero! However, designing a practical working circuit for a commercially feasible stereo tuner took some doing. A U. S patent is pending on this circuit.

Distortion performance of the bridge detector is pretty close to the theoretical zero. In addition to its excellent dis-tortion performance the bridge detector also exhibits capture ratio close to 0 dB.

Tunec circuits are not used in the MR 78 detector. They are quite difficult to manufacture and align accurately, and ordinary tuned-circuit discriminators go cut of adjustment There has been much talk about "permanently aligned" IF filters, but much silence concerning the most important source of misalignment in these same tuners - the discriminator. The two simple variable resistor adjustments in the MR 78 detector merely center the tuning meter and set the transistor bias. Complex tuning for minimum distortion is not neeced.

NEW VARIABLE SELECTIVITY

The MR 78 has excellent selectivity The bandwidth (210 kHz wide at 60 dB down) permits tuning stations that are impossible on ordinary turers. Even though the MR 78 has the narrowest IF bandwidth ever used in a stereo tuner, (it is the correct width to let just one FM station through) the great number of stations crowding the FM band requires a tuner with variable selectivity.

Variable selectivity allows stereo reception even under severe receiving conditions. In the NORMAL position, a very low distortion 8-pole filter is used in the IF circuit for listening to local broadcasts.

The NARROW position adds a sharp 8-pole filter to the NORMAL IF filter to yeld a low distortion (less than 0.2%) highly selective 16-pole composite IF filter. In the NARROW position interference is reduced while receiving distant stations.

SUPER-NARROW positon adds a 4-pole 4-zero crystal filter to the two ether IF filters. SUPER NARROW permits receiving distant stations which are on channels adjacent to local stations With an adecuate FM antenna there are usable signals never heard before with ordirary FM tuners.

Beautiful styling, extended control flexibility and mean-ingful illuminated operational indicators bring the McIntosh MR 78 to a new high level of professionalism.

Shown in walnut veneer

PERFORMANCEGUARANTEE

Performance limits are the maximum deviation from per - fection permitted for a Mcintosh instrument. We promise you that the MR 73 you buy must be capable of performance at or exceeding these limits or you get your money back. McIntosh is the only manufacturer that makes this guarantee.

Performance Limits

TUNING RANGE:
88 to 108 MHZ.

ANTENNA INPUTS:
300 ohms balanced: 75 onms unbalanced.

INTERMEDIATE FREQUENCY:
10.7 MHZ.

SENSITIVITY:
2 mV for 35 dB quieting; 2,5 mV at 100% modulation (± 75 kHz deviation} for 3% total noise and harmonic distortion.

SIGNAL TO NOISE RATIO:
75 dB below 100% modulation.

HARMONIC DISTORTION:
0.2% mono or stereo at 100% modulation. 20 Hz to 15.000 Hz. Typically. 0.05% at 1.000 Hz

DRIFT
25.000 Hz for the first two minutes: thereafter 5.000 Hz at 25° C in 24 hours

FREQUENCY RESPONSE:
Mono: ±1 dB 20 Hz to 20.000 Hz with Standard de-emphasis. (75 mS): Stereo ± 1 dB 20 Hz to 15.000 Hz with standard de-emphasis (75 mS).

CAPTURE RATIO:
0.25 dB detector only: 2.5 dB complete tuner.

SELECTIVITY: Switch Setting:

	NORMAL	NARROW	SUPER NARROW
AdjacentChannei	7 dB	22 dB	55 d5
Alternate Channel	55 d5 >	90 dB >	90dB

SPURIOUS REJECTION:
I00dB IHF.

IMAGE REJECTION:
103 dB at 88 to 103 MHZ (IHF).

INTERMODULATION DISTORTION:
0.2% mono or stereo for any combination of frequencies from 20 Hz to 15.000 Hz with peak modulation equal to 100% or less. Typically 0.1%.

MAXIMUM SIGNAL INPUT:
12 volts acrcss 300 ohm antenna terminais will not increase harmonic or intermodulation distortion.

AUOIO HUM:
75 dB down from 100% modulation.

MUTING:
70 dB noise reduction between stations.

MUTING THRESHOLD (Typical):
DISTANT position 5 mV; LOCAL. position 20 mV

SCA FILTER:
50 dB down from 67 kHz to 74 kHz: 275 dB per octave slope.

STEREOSEPARATION:
40 dB at 1.000 Hz.

STEREO FILTER (Typical):
10 dB noise reduction in Position 1.
20 dB noise reduction in Position 2.

AUDIO OUTPUT:
Front Panel Controlled: 2.5 volts into 47.000 ohms: Fixed Output: 2.5 volts into 47.000 ohms. 1.0 volts into 600 ohms All tuner performance limits were measured with SELEC- TIVITY switch set at NORMAL, unless otherwise stated.

GENERAL

POWERRECUIREMENT:
120 Volts, 50/60 HZ 35 watts

SEMICONDUCTOR COMPLEMENT:
3 JFET's 2 MOSFET's 17 Bipolar Transistors. 43 Diodes. 4 integrated Circuits.

MECHANICAL

SIZE:
Front panel: 16 inches wide (40.64 cm) by 5-7/16 inches high (13.81 cm): Chassis 15 inches wide (38.1 cm) by 13 inches deep (33.02 cm), including panloc shelf and back panel connecters: Knob Clearance: 1-1/2 inches (3.81 cm) in front of mounting panel

FINISH:
Front panel Anodized gold and black with special goldteal panel nomenclature illumination; Chassis: Chrome and black

MOUNTING:
McIntosh developed professional PANLOC.

WEIGHT:
27 pounds (12,25 kg) net. 39 pounds (17.69 kg) in shipping carton.

LOW DISTORTION AND HIGH PERFORMANCE FOR SUPERIOR FM

THE MR 77

Shown in valnut veneer case

Performance Limits

USABLE SENSITIVITY
2 mV for 35 dB of quieting. 2.5 microvolts typical.

SIGNAL TO NOISE RATIO;
75 dB below 100% modulation

HARMONIC DISTORTION;
Will not exceed 0.2% mono or stereo at 100% modulation. 20 Hz to 15.C00 Hz.

INTERMODULATION DISTORTION:
Will not exceed 0.2% mono or stereo for any combination of frequencies from 20 Hz to 15.000 Hz with peak modulation equal to 100% or less. 0.1% typical.

AUDIO FREQUENCY RESPONSE:
± 1 dB 20 Hz to 15.200 Hz with standard de-emphasis. (75m5) and 19.000 Hz pilot filter.

CAPTURE RATIO:
0.25 dB detector only; 2.5 dB complete tuner at 100% modulation

SPURIOUS REJECTION:
100 dB.

IMAGE REJECTION:
100 dB at 88 to 108 MHz (IHF).

SELECTIVITY:
Adjacent channel: 6 dB: Alternate channel: 50 dB.

STEREO SEPARATION:
40 db at 1.000 Hz.

STEREO FILTER:
10 dB noise reduction in position 1; 20 dB noise reduction in positon 2.

SCA FILTER
50 dB down from 67 kHz to 74 kHz; 275 dB per octave slope.

DRIFT:
25.000 Hz in first two minutes; thereafter 5.000 Hz in normal temperatures.

MUTING:
70 dB noise reduction between Statons.

MUTING THRESHOLD:
Position 1.5 mV. Position 2.20 mV

ANTENNA INPUTS:
300 ohms balanced; 75 ohms unbalances

MAXIMUM SIGNAL INPUT:
12 volts across 300 ohms antenna terminals will not increase harmonic or intermodulation distortion.

AUDIO OUTPUT;
2.5 volts into 47.000 ohms; 1 volt into 600 ohms from fixed output

IF SYSTEM:
8-Pole IF filter.
2 IC's
1 J-FET, and push-pull overlay power transistor stage driving a linear phase bridge discriminator.

STEREC INDICATOR:
Stereo light activated by 19.032 Hz only

AUTOMATIC MONO-STEREO SWITCH:
McIntosh developed; all electronic automate mono-stereo switching circuit.

GENERAL

SEMICONDUCTOR COMPLEMENT:
21 Transistors
4 Integrated Circuits
1 Indicator Tube.

POWER REQUIREMENT:
120 volts. 52/60 Hz. 35 watts.

MECHANICAL

SIZE
Front panel: 16 inches wide (40.64 cm) by 5-7/16 inches high (13.81 cm); Chassis: 15 inches wide (38.1 cm) by 13 inches deep (33.02 cm) including PANLCC shelf and back panel connectors. Knob Clearance: 1-1/2 inches {3.81 cm) in front of mounting panel

FINISH:
Front panel: Anodized gold and black with special gold/ teal nomenclature illumination. Chassis: Chrome and black

MOUNTING:
McIntosh developec professional PANLOC.

WEIGHT.
27 pounds (12.25 kg) net
39 pounds (17,69 kg) in shipping carton.

NEW ENGINEERING NEW PERFORMANCE
THE MR 74 AM-FM/FM STEREO TUNER

Shown in walnut veneer cabinet

A new addition to the front panel is the SELECT pushbutton. With it control of the IF characteristics is brought to the front panel. It allows stereo reception even under severe receiving conditions. In the NORMAL position a very low distortion dual *QUAD-TUNED* IF filter is used The dual *QUAD-TUNED* IF filter has unusual adjacent channel selectivity and low distortion. The *QUAD-TUNED* IF filter has ecual time delay in is pass band region. All other IF filters have excessive delay distortion, the *QUAD-TUNED* IF filter has almost no delay distortion from antenna input to discriminator output! You get overall lower cistortior performance.

Activating the SELECTivity pushbutton routes the signal to two double-tuned transformers, a ceramic filter network. and a single gate MOS-FET. The sides of the IF curve are compressed by this cir - cuit narrowing the IF bandpass In this mode of operation weak stations adjecent to strong stations can be tuned with surprising clarity.

McIntosh has developed a special detecting circuit used in the multiplex section. A particular advantage of this circuit is the elimination of the critical adjustments necessary with commonly used matrixing circuits. The circuit detects the L - R sidebands, then automatically matrixes the recovered information with the L + R carrier signal. This yields the left and right program output with maximum separation

AM

For greater spurious rejection the AM-RF amplifier circuit in cludes a three section variable tuning capacitor in the metal enclosed shielded RF module which also houses the FM-RF front end. The AM circuit has constant sensitivity, constant selectivity, high image rejection across the complete AM band. This circuit design achieves ecual sensitivity even down at the low end of the band. Spurious, image, and intermediate frequency rejection are all superior. The McIntosh circuit is unicue in a superheterodyne AM receiver.

A high-quality loopstick antenna is provided It can be rotated for maximum performance, optimum signal rejection or minimum interference. Each loopstok is individually tuned for optimum per - formance. After tuning the loopstik is then sealed. Custom, matching of the loopstick to the AM-RF front end maximizes the performance of the loopstick antenna.

Performance Limits

FM

SENSITIVITY: 2.5 mV 3t 103% modulaton (±75 kHz deviation) for 3% total noise 3nd harmonic distortion
SIGNAL TC NOISE RATIO: 70 dB below 100% modulaton
HARMONIC DISTORTION: MCNC - 3.3% at 100% modulation z75 kHz deviation; STEREO -3.5% at 1C0% modulation
DRIFT: 25.000 Hz for the first two minutes; thereafter 5.000 Hz at ambient temperatures
FREQUENCY RESPONSE: ±1 dB 20 Hz to 15.000 Hz with standard de-emphasis (75 mS)anc 19.003 Hz p lot filter
CAPTURE RATIO: 1,5 dB minimum

SELECTIVITY: Switch Setting	NORMAL	NARROW
Adjacent Channel:	6 dB	15dB
Alternate Channel:	58 dB	88dB

SPURIOUS REJECTION: 90 dB
IMAGE REJECTION 95 dB at 93 to 108 MHz (IHF)
MUTING: 50dB noise reduction in LOCAL positon
SCA FILTER: 50 dB down from 67 kHz to 74 kHz: 275 dB per octave slope
STEREO SEPARATION: 35 dB at 1.000 Hz
STEREO FILTER: 10 dB noise reduction in Position 1; 20dB noise reduction in Position 2

AM

SENSITIVITY: 75 mV {external ant.)
SIGNAL TO NOISE RATIO: 55 dB at 100% modulation; 45 dB minimum
HARMONIC DISTORTION: Does not exceed 1% at 30% modulation

SELECTIVITY: Switch Setting:	NORMAL	NARROW
Adjacent Channel:	35 dB	45 dB

IMAGE REJECTION: 65 dB minimum 540 kHz - 1600 kHz
FREQUENCY RESPONSE: 3500 Hz - 6 dB down. NORMAL position; 2100 Hz - 6 dB down. NARROW position. All tuner performance limits were measured with SELECTIVITY at NORMAL, unless otherwise stated.

GENERAL

POWER REQUIREMENTS: 120 volts. 50/80 Hz. 30 watts
SEMICONDUCTOR COMPLEMENT: 5 FETs. 17 transistors. 2 ICs. 28 diodes. 1 indicator tube

MECHANICAL

SIZE: Front panel 16 inches wide (40.64 cm) by 5-7/16 inches high (13.81 cm); Chassis: 15 inches wide (38.1 cm) by 13 inches deep (33.02 cm), including PANLCC shelf and back panel connectors; Knob Clearance 1-1/2 inches (3.81 cm) in front of mounting panel.
FINISH: Front panel: Ancdizec gold and black with special gold/teal panel nomenclature illumination; Chassis: Chrome and black.
MOUNTING McIntosh developed professional PANLOC.
WEIGHT: 25 pounds (11.34 kg) net; 37 pounds (16.78 kg) in shipping carton.

HIGH PERFORMANCE, SOLID STATE ALL IN A COMPACT, BEAUTIFUL

MX 113 AM-FM/FM STEREO

OUTSTANDING NEW DESIGN AND PERFORMANCE

The IF in the FM consists of two integrated circuts and two *QUAD-TUNED* filters. They combine to give a total gain cf over 120 dB (the signa! is amplified to over 1.000,000 times its original level.) The IF filter has equal tire delay in its pass band region. Any error in time delay causes FM distortion. Ail ether IF filters have delay distortion, some as much as 100% of the 10.7 MHz transit delay. This circuit has less than 1.0% delay distortion from antenna input to discriminator output which makes possible the overall low distortion performance limit for the FM tuner and multiplex section.

The response curve cf the IF has nearly linear phase characteristic. The skirts of the response cuve are very steep The maximum width is 170 kHz at - 3.0 dB and 500 kHz at — 60 dB. The response curve is symmetrical each side of the center frequency. The filters are permanently sealed and do not require adjusting. The IF cannot drift nor vibrate out of adjustment. The exceptionally high gain of the two integrated circuits assures ”hard limiting" at very low levels of input signals.

Each integrated circuit contains 16 transistors. 3 zener diodes. 5 diodes and 23 resistors, all on a single monolithic silicon chip.

VARIABLE SELECTIVITY

A new addition to the front panel is the SELECT pushbutton. With it, control of the IF characteristics is brought to the front panel. It allows stereo reception even under severe receiving conditions. In the NORMAL position a very low distortion dual QUAD-*TUNED* IF filter is used. It exhibits unusual excellent adjacent channel selectivity and lev/ distortion. The *QUAD-TUNED* IF filter has equal time delay in its pass band region. All other IF filters have excessive distortion.

The *QUAD-TUNED* IF filter has almost no delay distortion from antenna input to dis-criminator output! You get overall lower distortion performance

Activating the SELECTivity pushbutton routes the signal to two double-tuned trans formers, a ceramic filter network, a single-gate MOS-FET. and the dual *QUAD-TUNED* IF filters ”The sides of the IF curve are com-pressed, narrowing the IF bandpass. In this mode weak stations adjacent to strong stations can be tuned with surprising clarity.

McIntosh has develcped a special detecting circuit used in the multiplex section. A particular advantage of this circuit is the elimination of the critical adjustments necessary with commonly used matrixing circuits. The circuit detects the L — R sidebands, then automatically matrixes the recovered information with the L + R carrier signal. This yields the left and right program output with maximum separation.

MX 113 AM-FM/FM STEREO TUNER PREAMFLIFIER

Shown in walnut veneer cabinet

AM-FM/FM STEREO

For greater spurious rejection the AM-RF amplifier circuit includes a three section variable tuning capacitor in the metal enclosed shielded RF module which also houses the FM-RF front end. The AM circuit has constant sensitivity, constant selectivity, high image rejection across the complete AM band. This circuit design achieves equal sensitivity even down at the low end of the band. Spurious, image. and intermediate frequency rejection are all superior. The McIntosh circuit is unique in a superheterodyne AM receiver.

A high-qualtiy locpstick antenna is provided. It can be rotated for maximum performance, optimum signal reception or minimum interference Each locpstick is individually Tuned for optimum performance After tuning The loopstick is then sealed. Custom matching of the loopstick to the AM-RF front end maximizes the performance of the loopstick antenna.

RELIABILITY AND IDEAL FLEXIBILITY STEREO CONTROL CENTER

TUNER PREAMPLIFIER

Performance Limits

FM

USABLE SENSITIVITY: 2.5 microvolts at 100% modulation (± 75 kHz deviation) for less than 3% total noise and harmonic distortion.

SIGNAL TO NOISE RATIO: 70 dB at 100% modulation.

HARMONIC DISTORTION: Mono: Will not exceed 0.3% at 100% modulation ± 75 kHz deviation. Stereo: Will not exceed 0.5% at 100% modulation ± 75 kHz deviaton.

FREGUENCY RESPONSE: ± 1 dB from 20 Hz to 15.000 Hz with standard de-emphas:s(75mS) and 19,000 Hz pilot filter

CAPTURE RATIO: 1.5 dB

SPURIOUS REJECTION: 90dB

IMAGE REJECTION: 95 dB at 88 to 108 MHz (lHF)

STEREO SEPARATION: Exceeds 35 dB at 1.000 Hz.

SELECTIVITY: Switch Setting:	OUT	IN
Adjacent Channel:	6dB	15dB
Alternate Channel:	58 dB	83dB

TUNING INDICATOR: D'Arsonval movement meter with increased sensitivity.

STEREO INDICATOR: Stereo light activated by 19.000 Hz pilot signal only.

AM

SENSITIVITY: 75 microvolts at 1.000 kHz (using external antenna input).

SIGNAL TO NOISE RATIO: 45 dB

HARMONIC DISTORTION: 1% at 30% modulation.

FREQUENCY RESPONSE Down 6dB at 3.500 Hz.

SELECTIVITY: Switch Setting:	OUT	IN
Adjacent Channel:	35 dB	45dB

IMAGE REJECTION: 65 dB: 540 kHz tc 1600 kHz

PREAMPLIFIER

FREQUENCY RESPONSE ± 0.5 dB. 20 to 20.000 Hz.

DISTORTION: Will not exceed 0.1% at 2.5 volts output. 20 to 20.000 Hz.

INPUT SENSITIVITY AND IMPEDANCE

Phono 1 and Phono 2: 2 millivolts for 2.5 volts output at 1.000 Hz. 47.000 ohms: Auxiliary and Tape: 0.25 volts for 2.5 volts output: 250.000 ohms.

VOLTAGE AMPLIFICATION:

Phono 1. Phono 2 to Main output 62 dB. to Tape output 42 dB. Auxiliary. Tape to Main output 20 dB to Tape output 0 dB

OUTPUT:

Main: 2.5 volts with rated input. Up to 10 volts can be developed without increase in distortion. FM will produce 10 volts output at 100% modulation. Tape: 0.25 volts with rated input. Phono signal to 10 millivolts produces 1.2 volts output FM will produce 1 volt output at 100% modulation. L + R 2 volts with rated input.

HUM AND NOISE:

Phono 1 and Phoro 2: 72 dB beow 10 millivolt input: equivalent to less than 3 microvolts at the input terminals. Aux-Tape: 85 dB below 2.5 volts output, unweighted.

BASE CONTROL: -18 dB to + 16 dB at 20 Hz

TREBLE CONTROL: ± 20 dB at 20.000 Hz.

LF FILTER: Flat or roll off below 50 Hz. down 12 dB at 20 Hz.

HF FILLER: Flat or roll off above 5,000 Hz. down 12 dB at 20.000 Hz.

POWER REQUIREMENTS: 120 volts. 50/60 Hz. 30 watts

TRANSISTOR COMPLEMENT:

2-JFET
3-MOSFET
30—Silicon Planar
31-Diodes
2—Integrated Circuits (each contains the equivalente of 16 transistors 3rd 8 diodes).

FACILITIES AND FEATURES

VOLUME CONTROL: Precision tracked" at all listening levels (0 to—65 dB). Does not change stereo balance as loueness is changed. The AC power ON/OFF switch is coupled with this control.

BALANCE CONTROL: Natural balance at center position, attenuation of left or right channel by rotating control.

LOUDNESS: Loudness compensated or flat response—Loudness position boosts low frequencies for low level listening Operates as a function of volume control position. Full compensation is obtained at lower volume levels and flat response is obtained at full volume.

SELECTIVITY: Increases the ability of the tuner to separate a weak (distant) station from a strong (local) station on adjacent channels.

MODE Selects either stereo or mono operation.

PHASE CONTROL: Electronically reverses phase in the left channel to correct ”out of phase” program sources.

MUTING: Suppresses the background noise and hiss normally heard between FM stations

TAFE MONITOR Pushbutton: compares recorded tape with program source while recording.

MUTING ADJUST: Modifies the noise rejection threshold on FM

DIAL SCALE INTENSITY: Modifies the brightness of the illumination of the front panel.

MECHANICAL

SIZE: Frontpanel: 16 inches wide (40.64 cm) by 5-7/16 inches high (13.81 cm): Chassis: 15 inches wide (38.1 cm) by 13 inches deep (33.02 cm), indue ng PANLOC shelf and back panel connectors. Knob Clearance 1-1/2 inches (3.81 cm) in front of mounting parel.

FINISH: Front panel: Anodized gold and black with special gold/teal panel nomenclature illumination: Chassis: Chrome and black.

MOUNTING: McIntosh developed professional PANLOC.

WEIGHT: 26 pounds (11.79 kg) net. 38 pounds (17.24 kg) in shipping carton.

Shown in walnut veneer cabinet

MA 6100 *....Here is performance once associated only with separate preamps and power amps*

The MA 6100 delivers McIntosh performance and Quality in a combnation solid state preamplifieir and solid state power amplifier. The stefed oreampltfler has tn« io««st fur- an: rclse of any combination unit.

The MA 6100 reproduces music accurately. There is no fuzziness. Here is the power you need to give you the sound of livemuse In your home.

The silicon rectifiers power supply has instant response to the amplifiers needs. Recovery from the loudest passage is instartaneous. The music sounds alive and thrilling, not clouded by power supply under design.

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

Performance Limits

POWER OUTPUT:

70 watts minimum sine wave continuous average power output, per channel, both channels operating into 8 ohms load impedance, which is:

23.7 volts RMS across 8 ohms

40 watts minimum sine wave continuous average power output, per channel, both channels operating into 16 ohms load impedance, which is:

25.3 volts RMS across 16 ohms

60 watts minimum sire wave continuous average poweroutput. per channel, both channels operating into 4 ohms load impedance, which is:

15.49 volts RMS across 4 ohms

OUTPUT LOAD IMPEDANCE:

4 ohms. 8 ohms, or 16 ohms

RATED POWER BAND

20 Hz to 20.000 Hz

TOTAL HARMONIC DISTORTION:

0.2% 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

INTERMODULATION DISTORTION:

0.2%if instantanous peak power output is twice rated continuous average power or less per channel with both channels operating for any combinatlon of frequencies 20 Hz to 20.000 Hz FREQUENCY RESPONSE : (at cre watt output)

20 Hz to 20.000 Hz +0 -0,6 dB

NOISE AND HUM

power Amplifier: 95 db below rated output

Aux. Tape. Tuner: 90 dB below rated output

Phono input. Tape Hd.: 76 dB below 10 mV input

OUTPUT VOLTAGE :

A: TAPE output

Aux. Tape Tuner: 300 mV with rated input.

Phono: 300 mV with rated input: 1.2 volts with 1.0 mV input at 1000 Hz

Tape Hd: 300 mV at 500 Hz wltn rated Input

DAMPING FACTOR:

50 at 3 ohms output

100 at 16 ohms output

INPUT SENSITIVITY AND IMPEDANCE:

Power Amplifier: 3 volts. 100.000 ohms

Phono 1 and Phono 2: 2.5 mV at 1000 Hz 47.000 ohms

Tape Head 3 mV. 47.000 ohms

Tape Aux. and Tuner: 300 mV 260.000 ohms

BASS CONTROLS:

•16 dB to -16 dB at 20 Hz

TREBLE CONTROLS:

• 16 dB to -16 dB at 20.000 Hz

L.F. FILTER:

Actlve filter. 12 db per octave roll off below 50 Hz: 20 dB down at 20 Hz

H.F. filter:

Actlve fliter. 12 dB per octave roll off above 3000 Hz: 20 dB down at20,000 Hz

GENERAL

SEMICONDUCTOR COMPLEMENT:

36 Silicon Transistors 22 silicon Rectifiers and Diodes 2 silicon blistersi switches. 2 Triac

POWER requirements:

120 volts. 50/60 Hz, 70 WattS at Zero signal output 400 watts at rated outout

FACILITIES AND FEATURES

COMPENSATION SWITCH:

Three positon switch for FLAT. LOUDNESS. or PRECENSE. LOUDness boosts low frequencies for low level listening PRESence boosts mid frequencies 4 dB to increase “presence effect

TAPE INPUT/MONiTOR SWITCHES:

Either of two tape recorders can be piayed or monitored

TAPE COPY SWITCH:

Two tape recorders can be corrected to copy from tape machine 1 to tape machine 2 or vlce versa

HEADPHONE JACK:

For listening with low impdance dynamic stereo headphones

MECHANICAL

SIZE:

Front panel measures 16 inches wlde (40,84cm) by 6-7/16 inches high (13,81 cm) Chassies measures 15 inches wide (38.1 cm) by 13 Inches deep (33.32 cm), including PANLOC shelf and back panel connectors. Knob clearance required Is 1-1/2 Incites (3,81 cm) In front of mounting panel.

FINISH:

Front panel: Anodized gold and black with special gold/teal panel nomencisture illumination

WEIGHT:

34 pounds (15,42 kg) net 46 pounds (20.87 Kg) in shipping carton.

MONO POWER AMPLIFIER MC 50

POWER OUTPUT:

50 watts minimum sine wave continuous average power output, operating into 4 ohms. 8 ohms, or 16 ohms load impedance, which is:

14.1 volts RMS across 4 ohms
20.0 volts RMS across 8 ohms
28.3 volts RMS across 16 ohms

OUTPUT LOAD IMPEDANCE:

4 ohms, 8 ohms, or 16 ohms; separate terminals are provided for each output

RATED POWER BAND:

20 Hz to 20,000 Hz

TOTAL HARMONIC DISTORTION:

0.25% maximum harmonic distortion at any power level from 250 milliwatts to 50 watts from 20 Hz to 20.000 Hz

INTERMODULATION DISTORTION:

Will not axceed 0.26% If instantaneous peek power output Is 100 watts or less for any combonatlon of frequencies 20 Hz to 20,000 **Hz**

FREQUENCY RESPoNSE: (at one watt output}

20 Hz to 20 00C Hz 0 - 0,26 dB
10 Hz to 100.000 Hz 0 - 3.0 dB

NOISE AND HUM:

90 dB below rated output

Noise ANC HUV
SC dö Dato* ratad Output

OUTPUT IMPEDANCE

4, 8 or 16 ohms

OUTPUT VOLTAGES :

26 volts for distribution lines

DAMPING FACTOR:

26 at 4 ohms output
50 at 8 ohms output
17 at 16 ohms output

INPUT IMPEDANCE:

200.000 ohms

INPUT SENSITIVITY:

0.6 volts. Level control provlded for higher input voltage.

GENERAL

POWER REQUIREMENTS:

120 volts 50/60 Hz. 15 watts at zero signal output. 120 watts at rated output

SEMICONDUCTOR COMPLEMENT:

1 2 silicon transistors
12 silicon ractifiars and diodes:

MECHANICAL

size:

5-1/2 inches high (13,97 cm) 8 Inches Wlde (20.32 cm). 12-1/2 inches deep (31.76 cm)

CHASSIS:

Chrome and black

WEIGHT:

20 pounds (9,07 kg) net. 24 pounds (10,89 kg) In shipping carton.

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.

PERFORMANCE GUARANTEE- Performance limits are the maximum deviation from perfection permitted for a McIntosh instrument. We promise that the instrument you buy must be capable of performance at or exceeding its limits or you get your money back. McIntosh is the only manufacturer that makes this guarantee.

STEREO POWER AMPLIFIER MC 2505

POWER OUTPUT:

50 watts minimum sine wave continuous average power output, per channel, both channels operating into 4 ohms. 8 ohms, or 16 ohms load impedance, which is:

14.1 volts RMS across 4 ohms
20.0 volts RMS across 8 ohms
28.3 volts RMS across 16 ohms

OUTPUTLOAO IMPEDANCE:

4 ohms. 3 ohms, or 16 ohms; separate terminals are provided for each output

RATED POWER BAND:

20 Hz to 20,000 Hz

TOTAL HARMONIC DISTORTION:

0.25% maximum harmonic distortion at any power level from 250 milliwatts to 50 watts per channel from 20 Hz to 20,000 Hz. both channels operating

INTERMODULATION DISTORTION:

0,25% if Instantaneus peak power output is 100 watts or less per channel with both channels operating for any combination of frequencies 20 Hz to 20.000 Hz

FREQUENCY RESPONSE: {at one watt output)

20 HZ to 20.000 Hz +0 -0.25 dB
10 Hz to 100.000 Hz +0 -3.0 dB

NOISE AND HUM:

90 dB below rated output

OUTPUT POWER MONITOR METER:

Meter range switch Is provided to increase meter sensitivity by 10 dB I or 20 dB. Calibration accuracy at 0 dB reading is -2% at all frequencies meter range accuracy is ±5%

OUTPUT IMPEDANCE:

4, 8 and 16 ohms

OUTPUT VOLTAGES:

25 volts for distrubiations lines

HEADPHONE OUTPUT:

Designed for low impedance dynamic phones

DAMPING -FACTOR

14 at 4 ohms
27 at 8 ohms output
13 at 16 ohns output

INPUT IMPEDANCE SENSITIVITY:

200.000 ohms: 0.5 volt. Level control provided for higher input voltage.

CCNTROLS:

AC Power ON-OFF switch. Speaker ONOFF switch. Left gain Right gain ard Meter range swltch.

GENERAL

POWER REQU REMENT3

120 volts. 50/60 Hz. 75 watts at zero signal output. 250 watts at rated output

SEMICONDUCTOR COMPLEMENT:

26 silicon transistors;
27 silicon rectifiers and diodes

MECHANICAL

SIZE:

Front panel measures 16 inches wide (40,64 cm) by 5-7/16 inches high (13,81 cm). Chassis measures 15 inches wide (33.1 cm) by 5 Inches high (12.7 cm) by 13 inches deep (33.32 cm), including connectcrs, Knob connectors. Khob clearance required is 1-1/2 inches (3.81 cm) In front of mountlng panel.

FINISH:

Panel is glass with anodized gold and black trim specially ilumtnated.

MOUNTING:

Exclusive Mclntcsh developed professonal PANLOC

WEIGHT:

38 pounds (17,24 kg) net. 53 pounds (24.04 kg) in shipplng carton.

STEREO POWER AMPLIFIER MC 2105

POWER OUTPUT

105 watts minimum sine wave continuous average power output, per channel, both channels operating into 4 ohms, 8 ohms, or 16 ohms load impedance, which is:

20.5 volts RMS across 4 ohms
29.0 volts RMS across 8 ohms
41.0 volts RMS across 16 ohms

OUTPUT LOAD IMPEDANCE

4 ohms, 8 ohms, or 16 ohms; separate terminals are provided for each output

RATED POWER BAND:

20 Hz to 20,000 Hz

TOTAL HARMONIC DISTORTION:

0.25% maximum harmonic distortion at any power level from 250 milliwatts to 105 watts per channel from 20 Hz to 20,000 Hz, both channels operating

INTERMODULATION DISTORTION:

0.25% If instantaneous peak power output is 210 watts or less per channel with both channels operating for any combinaton of frequencies 20 Hz to 20.000 Hz

FREQUENCY RESPONSE: (at one watt output)

20 Hz to 20,000 Hz +0 - 0,26 dB
10 Hz to 100,000 Hz +0 -3,0 dB

NOSE AND HUM:

90 dB below rated output

OUTPUT POWER MONITOR METER

Meter range switch Is provided increase meter sensitivity by 10 dB or 20 dB. Calibration accuracy at 0 dB reading is ± 2% at all frecuencies meter range accuracy Is ±5% all

OUTPUT IMPEDANCE

4, 8 and 16 ohms

OUTPUT VOLTAGES:

25 volts for distrobuation lines

HEADPHONE OUTPUT:

Designed for low impedance dynamic phones

CAMPING FACTOR:

18 at 4 onms output
13 at S ohms output
10 at 16 ohms output

INPUT IMPECANCE SENSITIVITY:

230.000 ohms: 0.5 volt. Level control provided higher input voltage

CONTROLS:

AC Power ON/OFF switch. Speaker CN/OFF switch. Left gain, Right gain and Meter range switch

GENERAL

POWER REQUIREMENTS

120 volts, 50/60 Hz. 75 watts at zero signal output. 430 watts at rated output

SEMICONDUCTOR COMPLEMENT:

34 silicon transistors: 18 silicon rectifiers and diodes

MECHANICAL

SIZE:

Front panel measures 16-3/16 inches wide (41.12 cm) by 7-1/8 inches high (13.1 cm) Chassis measures 15 inches wide (38.1 cm) by 6-9/16 inches high (16.67 cm) by 14-1/2 inches deep (35.83 cm) Inducing connectors. Knob clearance required is 1-1/2 nches (3.81 cm) in front of mounting panel.

FINISH:

Front panel is anodized gold and black with special gold(teal nomenclature iliumnaton Chassis is chrome and black.

MOUNTING:

Exclusive Mcintosh developed professonal PANLOC

WEIGHT:

65 pounds (29,48 kg) net. 77 pounds (34.93 kg) in shipping carton

McIntosh

MCINTOSH LABORATORY INC.
2 CHAMBERS ST, BINGHAMTON, N. Y. 13903
607-723-3512

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