

# SA-5800

100W FM/AM Stereo Receiver with Highly Efficient ITL-OTL-OCL Amplifier

**NATIONAL**

**HI-FI COMPONENTS**

**PANASONIC**



# Get an Earful of Pure Sound!

FROM A HIGHLY SENSITIVE FM/AM STEREO RECEIVER HOUSING POWERFUL DIRECT-COUPLED ITL-OTL-OCL AMPLIFIER & 2-FET'S, 1-IC STEREO TUNER

Designed to faithfully entertain your ears... you, the discriminating audiophile. This new FM/AM Stereo Receiver highlights all of the exclusive National Panasonic Features; Direct-Coupled ITL-OTL-OCL amplification circuitry and newly developed Differential amplifier circuits reward you with exciting distortion-free audio power. Two highly sensitive 4-pole (MOS) Field Effect Transistors, a Linearly Variable 4-gang FM capacitor, and a costly Monolithic IC in the specially built MPX circuit will gratify your growing need for selectivity in today's crowded FM world. Wider frequency response, higher damping factor with lower distortion and noise level, and superb, clear output signal all add up to incomparable stereo enjoyment. The skillfully designed station targeting system, bolstered by highly sensitive tuning circuitry, makes the SA-5800 the most advanced stereo receiver available today. The well-bred child of a close-knit family of electronics wizards, this sensitive instrument effortlessly meets your highest standards.



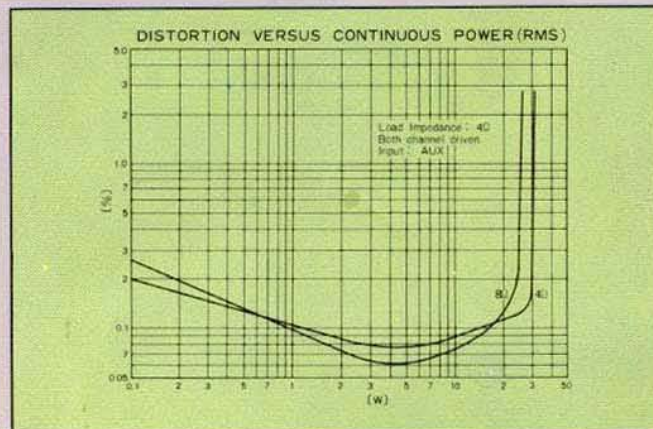
## HERE ARE THE FEATURES THAT MAKE AUDIO SECTION

### Powerful 100w Music Power:

Lend an Ear & Listen with Care!

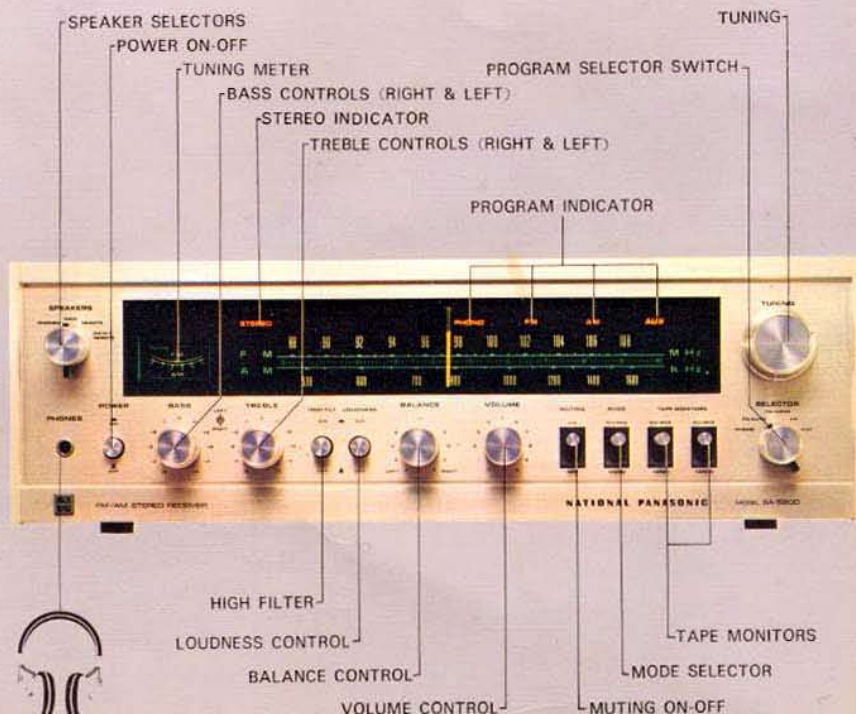
No sound has ever been so pure and so powerful as that of the SA-5800. These 100 watts of output power are more than sufficient to engulf your whole house in a sea of crystal-pure sound.

Whether you want to lose yourself in the driving rhythms of Jazz or the New Rock, or slide into that warm, classical world, let the SA-5800 be your Magic Carpet. Its vibrant power will set a crowd swinging to the throbbing beat, or gently soothe the meditative individual.

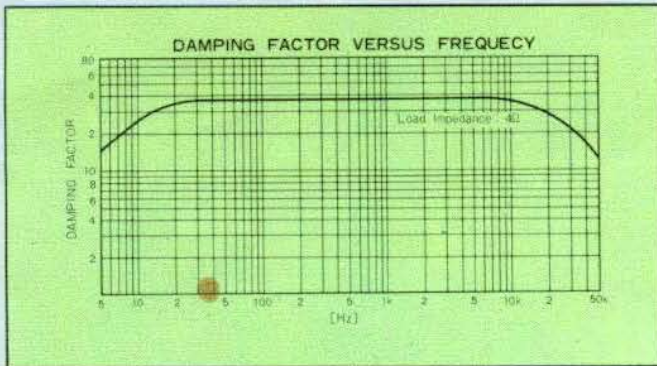


### Reliable, Stable Amplification:

Apart from the unique Direct-Coupled circuitry, this receiver also features newly developed differential amplifier circuits. No matter how weak the input signal, the amplifier section will magnify it faithfully, in no way impairing its tonal colors. Furthermore, it assures you of rock-stable performance with clean, linear response to all audible frequencies.



# THE DIFFERENCE!



## Exclusive ITL-OTL-OCL Circuitry:

The tremendous power of the SA-5800 is channeled through a totally new concept in circuit construction. By eliminating the need for the input and output transformers, and the output capacitor, the very source of noise and signal distortion has been eradicated. This new direct-coupled circuitry greatly widens the range of frequency response and boosts the damping factor to new higher levels. It also reduces the signal distortion to the range of imperceptibility.

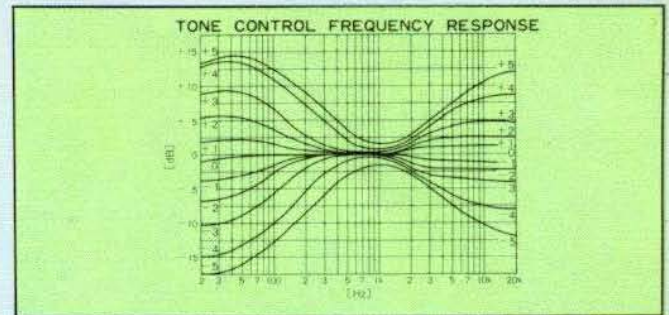


## Clean Full-Bodied Sound:

Even the transistors at the heart of this unique circuitry are totally new. Specially selected high performance transistors have been liberally employed throughout, enabling you to fully perceive the richness and grandeur of any musical sound.

The full complement of tone controls gives you the greatest possible range of Bass & Treble selection allowing you to tailor the sound, to your most demanding needs and tastes.

The volume control will help you to fill your ears with full concert hall stereo reality.



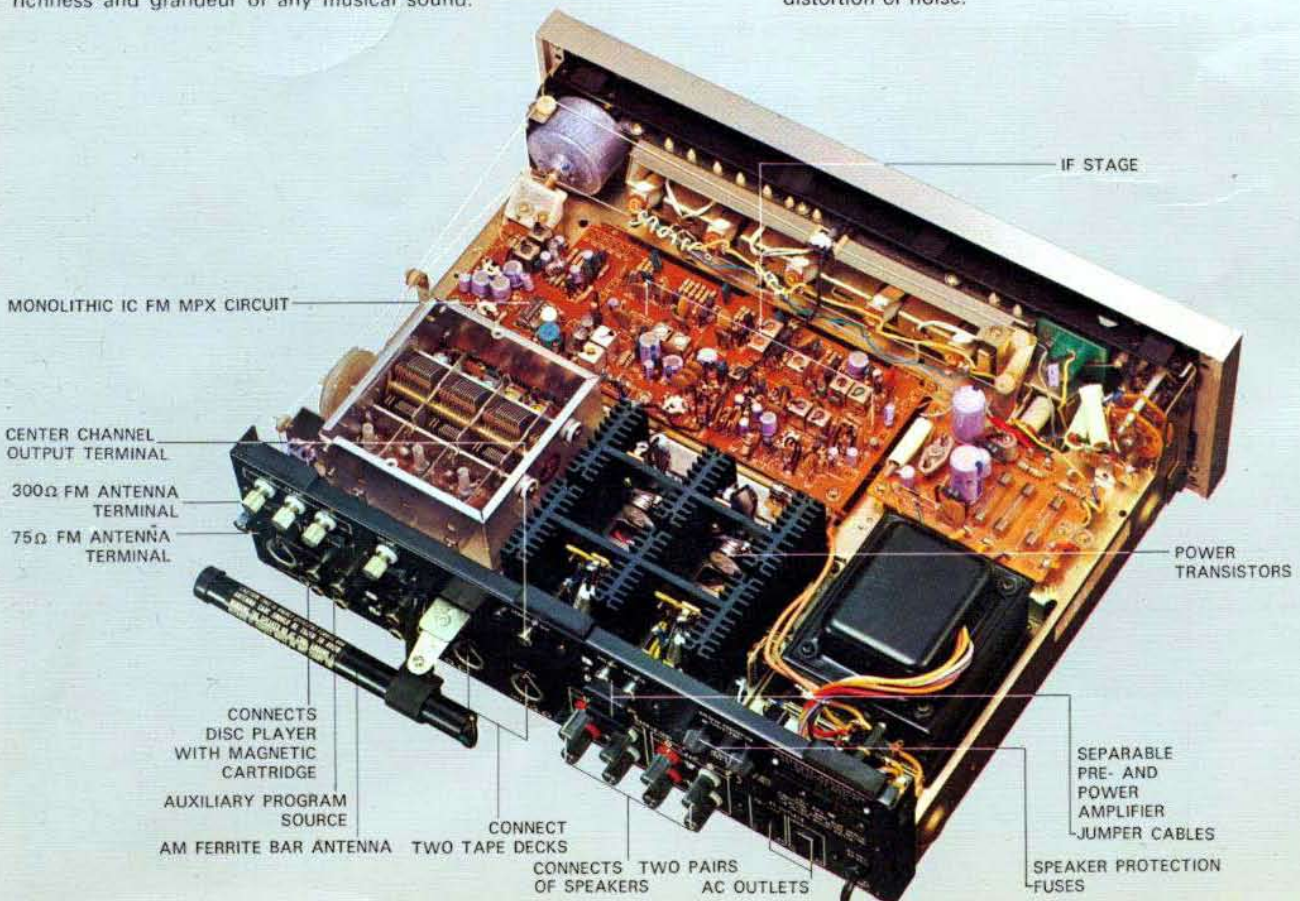
## Two Speaker-Systems Selector:

Stereo music no longer has to be confined to a single, isolated listening room. The Speaker System Selector allows you to have it anywhere in the house.

Simply plug another pair of speakers into the Remote-speaker terminals, set the Speaker-System Selector to "REMOTE" and that full, rich stereo sound is instantly piped to any other rooms you wish. Set the Selector to "MAIN + REMOTE" and your house becomes a Concert Hall, everywhere bathing you in your favorite music.

## Totally Noise-Free Pre-Amplifier:

The SA-5800 offers your ears crisp-clear sound rich, in all the perceptible tonal colors. All the thanks go to the extremely low-noise transistor (2SA666) and the honestly built 2-stage PNP-NPN directly coupled equalizer incorporated in the pre-amplifier. Whatever the strength of the signal you feed into the SA-5800, it will respond faithfully, keeping the amplified signal free from any distortion or noise.



MONOLITHIC IC FM MPX CIRCUIT

CENTER CHANNEL OUTPUT TERMINAL

300Ω FM ANTENNA TERMINAL

75Ω FM ANTENNA TERMINAL

CONNECTS DISC PLAYER WITH MAGNETIC CARTRIDGE  
AUXILIARY PROGRAM SOURCE

AM FERRITE BAR ANTENNA

CONNECT TWO TAPE DECKS

CONNECTS TWO PAIRS OF SPEAKERS  
AC OUTLETS

IF STAGE

POWER TRANSISTORS

SEPARABLE PRE- AND POWER AMPLIFIER JUMPER CABLES

SPEAKER PROTECTION FUSES



4-POLE MOS (3SK39)

## Two Tape Monitors:

Record your own professional quality tapes! From FM, AM, records, or other tapes. It's fantastically easy to capture pure, life-like sound by direct electronic coupling between the already recorded signal and your tape deck. Eliminating the highly inefficient use of another microphone, the SA-5800 assures you of perfect reproductions every time.

Simply plug your tape deck/decks into either of the two monitors, adjust the Volume level and that's all there is to it.

There's no need to worry about noise in your living room 'Recording Studio', because no noise can possibly interfere. Just watch the Recording Level Meters in your tape deck and rest assured that you are making an exact reproduction of the original.

## Efficient Loudness Control:

When playing program material at a very low background music level, the high treble tones tend to overwhelm the bass. To compensate for this disconcerting loss in the low frequencies, merely switch on the snappy Loudness Control. Both highs and lows will now be faithfully reproduced. Of course, the delicate stereo balance will not be upset, and the exact tonal quality of the original sound will be preserved with utmost fidelity.



## High Cut-off Filter:

Should peaks of high frequency signal from short circuiting or recorded flaws ever pass through the output stage, the High Cut-off Filter is there so that you will never be aware of the annoyance. Stereo balance and tonal qualities, of course, remain undisturbed by the efficient protective action of the High Cut-off Filter.

## Unique Station Targeting System:

Choose your favorites from the growing range of FM and AM station on the airwaves. Instantly!

The targeting system in the SA-5800 Receiver incorporates all of the latest National Panasonic developments for eliminating the sources of tuning fatigue. Linear FM scale for exacting discrimination. Extra long dial for instant, precise FM/AM station selection. Dead-accurate tuning meter for pinpointing and locking-in any signal, regardless of how distant or weak.

All these features are faultlessly matched with a Fly-wheel coupled Tuning Control, allowing you to effortlessly 'Float-Tune' to any station you choose.

## Regulated Power Supply:

Have no worries! Be assured that the power output of the SA-5800 as in all National Panasonic's top quality audio units, is perfectly regulated for reliable, sure performance.

For producing electrifying Symphonic climaxes, Heavy Rock, cool Gypsy violins or soft Mood Music, the power supplied to the different component circuits is maintained at the same stable level allowing precisely balanced stereo reproduction and tonal richness.

## FM SECTION

### Two Highly Selective MOS FET's :

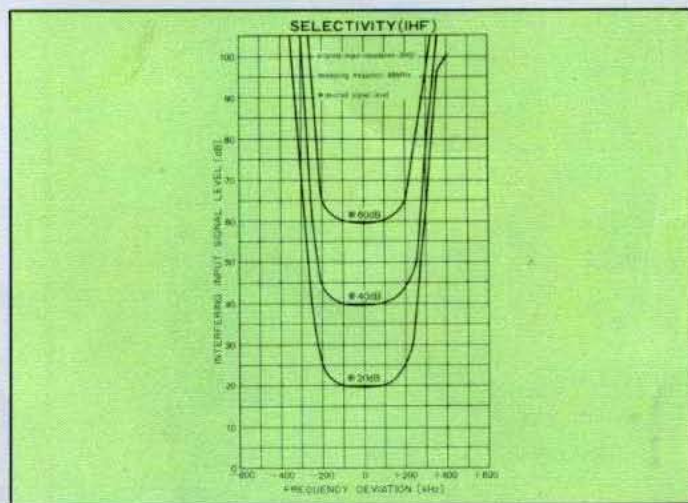
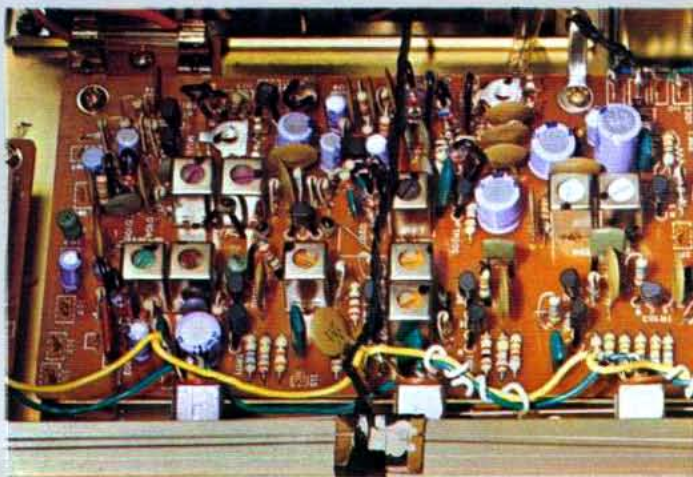
The SA-5800 features an entirely new FM frontend design. Completely shielded in a subchassis from distortion producing interference and troublesome power hum, it houses two highly selective Field Effect Transistors (4-pole MOS type) in both the first and the second RF stages which are perfectly co-ordinated with a linearly

variable 4-gang Tuning Capacitor and 4 tuned circuits. This flawlessly engineered design, assures you of unrivaled sensitivity and peak selectivity for collecting any FM station, near or far.



## 6-Stage IF Amplification Circuit:

Complementing the highly effective FM frontend, is a specially designed 6-stage IF Amplification Circuit employing 5 Differential Amplifiers and a unique 6-element Ceramic Filter. The highly refined selectivity characteristics offered by this advanced 6-stage IF Circuit are unparalleled by any receiver or tuner of this price range. Alternate Channel Selectivity is as much as 80 dB and capture ratio is far better than 1.5 dB.



## Noise-Eliminating Muting Switch:

The SA-5800 is an absolute joy to operate! You'll find that its performance is as clear and smooth as the cool, distinctive lines of its solid teak cabinet. Its pure tones should never be marred by interstation static shocks, hisses or hums. However, if it happens that such noise does interfere with your listening pleasure, just switch on the Muting Circuit. This feature rids the signal of unwanted noise for uninterrupted musical enjoyment.

## Monolithic IC in the MPX Circuit:

Many long years of costly research has gone into perfecting this refined stereo system. An intricate Monolithic Integrated Circuit soldered in the MPX section of the SA-5800 Receiver eliminates signal distortion, thus increasing the reliability of the whole unit.



## Versatile FM Antenna Circuit:

Wherever you live, no matter what type of antenna system you use, the SA-5800 Receiver will pull-in all of the desired FM signals like a powerful magnet, no matter how faded or distant.

If your apartment complex has a Shared Antenna System, you can simply plug the antenna leads into the 75 ohm Input.

For your own FM Antenna, you may use the 300 ohm Independent Input. In either case, the input signal is perfectly matched to the Input Circuitry for the smoothest signal transfer.

## AM SECTION:

### Superb Selectivity, Unmatched Sensitivity:

You'll love every bit of AM sound of the SA-5800 as much as you appreciate its FM performance. Rigidly built under the strict quality control, the RF section, coupled with the discriminating 3-gang Variable Capacitor, offers the ultimate in selectivity and signal gathering strength.



### Precise Dual-Purpose Tuning Meter:

#### ■ Signal Strength Meter for AM:

If the Mode Selector is on 'AM', the tuning meter automatically becomes a Signal Strength Meter. When tuning in an AM signal, simply spin the fly-wheel coupled Tuning Control and keep your eye on the tuning meter. When the desired station

is pinpointed the Signal Strength Meter will be fully deflected to the right, thus indicating that you are precisely tuned and ready to appreciate the finest AM sound you have ever heard.

#### ■ Center Tuning Meter for FM:

Now turn the Mode Selector to either "FM AUTO" or "FM MONO" and you have changed from a "Maximum Deflection" to a Center Tuning Meter, automatically.

To tell when your FM signal has been pinpointed, simply watch the meter needle. When it is perfectly centered, your FM station is perfectly tuned. It's that easy.

#### Reverse Automatic Gain Control:

The Automatic Gain Control system assures you of silky-smooth reception of any AM stations by minimizing the distortion in the input signal and leveling off its output. You can count on pure, rich AM sound every time you turn the Mode Selector to "AM".

#### Sensitive Ferrite-Bar Antenna:

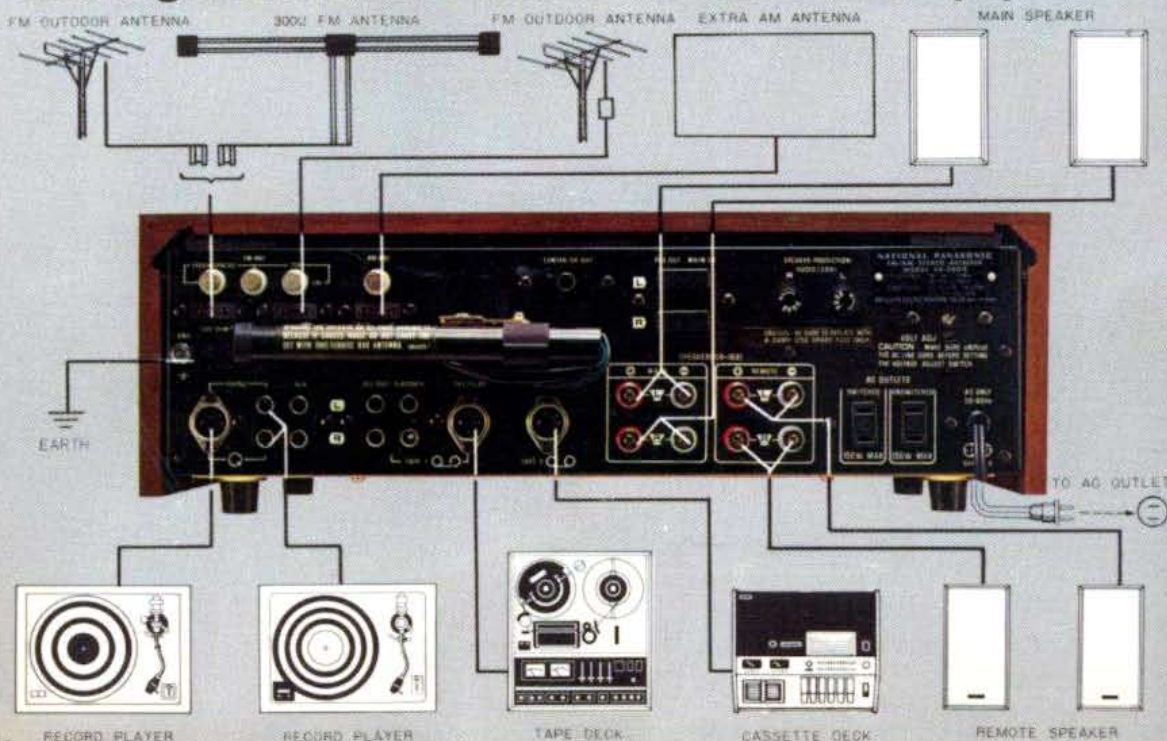
For collecting the weakest AM signal, the Ferrite-Bar Antenna is unbeatable. Conveniently located on the rear panel of the unit, the sensitive Ferrite-Bar Antenna can be easily oriented for the most effective AM reception.

#### Functional Slide Rule Tuning Panel:

For the ultimate ease in finding the station of your choice, the National Panasonic's SA-5800 has incorporated an extremely ingenious tuning device into the indicator needle of the broad, easy-to-read Slide Rule Tuning Dial.

Whenever the Dial's pointer is perfectly centered on a signal, it will glow with a soft marigold colour, further indicating that the SA-5800 is exactly tuned. Should the signal waver, ever so slightly, the light will extinguish itself. This is but another of the many visual tuning aids of the SA-5800.

## One Single Unit to Pilot-Control All Your Audio Equipment.



RS-736US



SL-41



SB-500

## TECHNICAL SPECIFICATIONS

### AUDIO SECTION

Music Power:	2 × 50W (4Ω)
	2 × 37.5W (8Ω)
RMS Power: each channel	37/37W (4Ω)
	27/27W (8Ω)
both channels	27/27W (4Ω)
	23/23W (8Ω)
Harmonic Distortion:	
	0.5% at 1000 Hz, Rated Power (4Ω)
	0.5% at 40~16,000 Hz, Rated Power (4Ω)
Intermodulation Distortion:	
	0.7% at 250/8000 Hz=4:1, Rated Power (4Ω)
Power Bandwidth:	5~40,000 Hz (-3 dB)
Frequency Response:	15~65,000 Hz (-3 dB)
Damping Factor:	70 (8Ω)
Load Impedance:	4~16Ω
S/N	
at Rated power:	PHONO 62 dB
	AUX 77 dB
Input Sensitivity:	
PHONO (MAG)	2 mV/50 kΩ
AUX	180 mV/100 kΩ
TAPE MONITOR (DIN):	
input	300 mV/55 kΩ
output	60 mV/70 kΩ
TAPE MONITOR (pin terminal):	
PLAYBACK	180 mV/40 kΩ
REC OUT	180 mV/750Ω
Tone Controls:	
Bass	+13 dB, -14 dB at 50 Hz
Treble	+10 dB, -10 dB at 10,000 Hz
Balance Control:	0~∞
High Filter	5000 Hz at -6 dB/oct
<b>FM TUNER SECTION</b>	
Antenna Terminals:	300Ω (balanced) 75Ω (unbalanced)

Frequency Range:	88~108 MHz
Sensitivity:	
300Ω	1.8μV, S/N 30 dB at ±40 kHz deviation
	1.6μV, S/N 26 dB
75Ω	1.2μV, S/N 30 dB at ±40 kHz deviation
	1.0μV, S/N 26 dB
Harmonic Distortion:	Mono 0.2% at ±40 kHz deviation
	Stereo 0.6%
S/N:	Mono 64 dB at ±40 kHz deviation
	Stereo 63 dB
Selectivity:	at 400 kHz 80 dB
IF Rejection:	100 dB
Image Rejection:	90 dB
AM Suppression:	45 dB
Capture Ratio:	1.5 dB
Leak Carrier:	38 dB at 19 kHz
	50 dB at 38 kHz
Stereo Separation:	40 dB at 1000 Hz
Limiting point (-3 dB):	1.2μV
Deemphasis:	50μ sec
Auto stereo operation level:	6μV
Bandwidth: IF Amplifier	400 kHz
FM-Demodulator	400 kHz

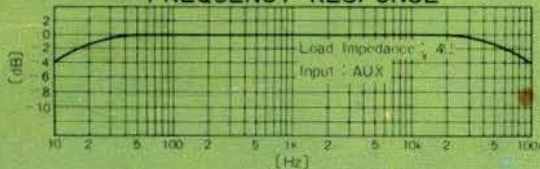
### AM TUNER SECTION

Frequency Range:	525~1605 kHz
Intermediate Frequency (IF):	455 kHz
Sensitivity:	15μV
Selectivity:	30 dB
Image Rejection:	65 dB
IF Rejection:	70 dB

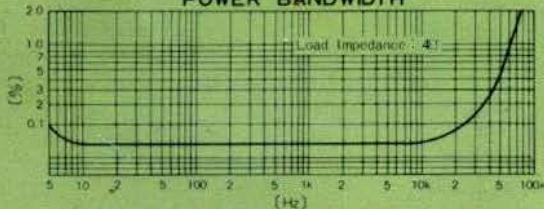
### GENERAL

Power Consumption:	230W
AC Power Supply:	110/120/220/240V 50/60 Hz
Dimensions (W×H×D):	16"×5½"×14"
	(406×140×356 mm)
Weight:	24 lb (10.9 kg)

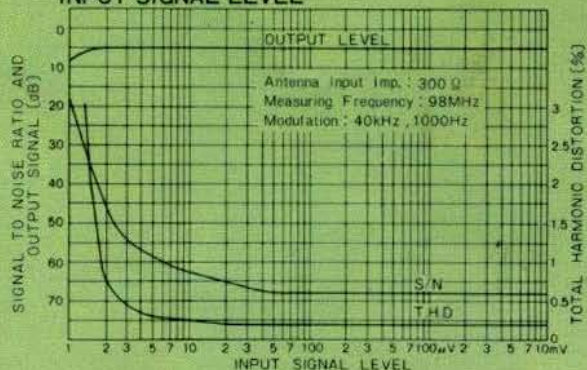
FREQUENCY RESPONSE



POWER BANDWIDTH



OUTPUT LEVEL, SIGNAL TO NOISE RATIO AND TOTAL HARMONIC DISTORTION VERSUS INPUT SIGNAL LEVEL



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