G-7700

Sansui Pure Power DC FM/AM Stereo Receiver with Exclusive Digitally Quartz-Locked Tuning System, 120 Watts/Ch, 20 to 20kHz, at 8 ohms, 0.025% THD.

- Patented Digitally Quartz-Locked Tuning
- Digital Tuning Dial Display
- Pure Power DC Amp Section
- LED Peak Power-Level Display

Sansui Only hi-fi, everything hi-fi.

The Sansui G-7700: Faithful hi-fi reproduction and drift-free tuning in this Pure Power DC Receiver with the Digital Dial.

It's easy to put "computer-like" cosmetics on the *outside* of a receiver to make you think the *inside* is just as advanced. But the real test comes (as always in hi-fi) in the listening. Especially when you are shopping for a receiver you can depend on to deliver *pure* reproduction from today's wide-range, low-noise/distortion *musical* sources.

So look (and listen, too) first for accurate tuning. In the Sansui G-7700 it's achieved with our patented Sansui Digitally Quartz-Locked Tuning System. FM stations *cannot* drift out of tune because we use a quartz/digital processor to instantly catch and correct any error. Back-up circuitry then takes the perfectly-tuned signal and treats it as a *strictly* high fidelity sound source for your listening pleasure.

Look (and listen), then, for pure power amplification. In the Sansui G-7700 it's achieved with our Pure Power DC amp—so good at fighting TIM and other kinds of distortion that we've applied for a patent on its elaborate circuitry. Power delivery is a massive 120 watts per channel, min. RMS, both channels driven into 8 ohms, from 20 to 20,000Hz, with no more than 0.025% total harmonic distortion.

Once you're satisfied the inside of the G-7700 is as advanced as you're likely to need for the next decade or so, *then* turn your attention to the outside, taking note of all the many conveniences that make it the most versatile and easy-to-use receiver in its price range. Your choice is bound to be the DC receiver with the digital dial, from Sansui, where it's *all* hi-fi.

Pure Power DC Amplifier section *effectively* reproduces all *musical* sources with lower TIM and THD, higher Slew Rate and faster Rise Time.

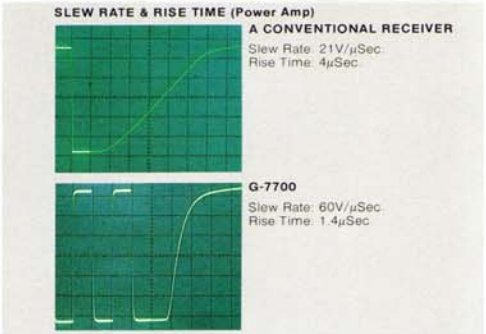
DC

All four vital amp specs (TIM, THD, slew rate and rise time) are optimized for Pure Hi-Fi performance here.

If you've kept abreast of the state of the art in amp design, you know that THD or total harmonic distortion—a steady-state specification—is no longer the *only* important way of judging an amplifier's performance abilities. While you might still prefer the "ear test" as your final criterion of quality, you should also know about such things as rise time, slew rate and TIM—the factors which actually determine the transient quality you're listening for.

TIM, of course, is Transient Intermodulation distortion, particularly harmful to musical signals. Sansui's original DC amplifier technology in the G-7700's power amp section keeps TIM under control. That technology also improves the slew rate to a high 60V/μSec. and the rise time to an excellent 1.4μSec.—both very instrumental in helping the amp respond more quickly and more accurately to the *pulsive* musical waveforms fed to it.

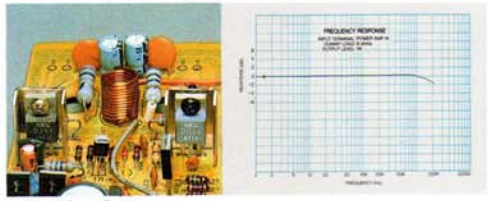
This said, we can now point out that while Sansui DC improves transient response as you've just learned, steady-state excellence is not sacrificed at all. THD and frequency response, for instance, are super-low 0.025% and DC—200kHz, respectively in the G-7700—a level thought to be impossible to obtain only a few short years ago.



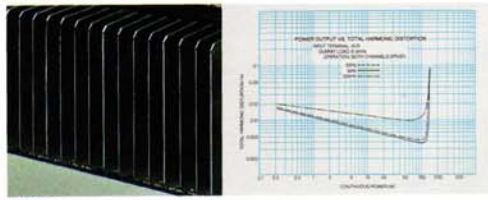
How? The answer is in special DC circuitry you can enjoy only in Sansui's best amps and receivers.

Keeping THD low while improving transient response is a feat only Sansui has mastered. You might find "DC" amps in other receivers, but only ours offer it in this refined way:

First, the input of the power amp in the G-7700 is of ICL (Input-Capacitor-Less) design with a Dual-FET differential. This is followed by a current-mirror loaded differential, a current-differential push-pull drive (Sansui pat. pend.), and, finally, a two-stage Darlington-coupled OCL (Output-Capacitor-Less) output.



DC Power Circuit Board



Heat Sink

We put the emphasis on *pure* DC for only this kind of circuitry can reduce TIM, raise slew rate and speed up rise time. These are achieved in the current-differential push-pull drive we mentioned above.

Of further technical interest is the Dual-FET, two FETs (Field-Effect Transistors) with carefully matched thermal characteristics and low-noise, high-gm performance. Together they form a very stable input stage. Then there are the output transistors themselves, mounted on extra-wide heat sinks for better heat dissipation. Since they feature extra-high linearity, the power amplifier in the G-7700 may be driven at its full rated power output of 120 watts per channel without the slightest worry about distortion or danger.

LED

Peak Power Level Display: 15 LEDs (Light-Emitting Diodes) flash instant-by-instant output from 0.01 to 120 watts.

For power output indication on the G-7700 we've chosen a newly-designed Peak Power Level Display. Why? Because electronic means of indicating flows of signals are more accurate, easier to read and, above all, much, much faster to respond than swing-needle types.

It has seven bright red LEDs per channel, arranged in a line which flashes outward from the center as power increases in the left/right output. The Power Display is calibrated from 0.01 to the rated 120 watts—fun to watch, and useful, too, as it helps you better control the signals you are sending to your speaker systems.

This receiver's power supply is a dramatic improvement over conventional types.

A huge, well-regulated power transformer with a pair of high-quality, low-impedance capacitors forms the power supply. Stereo sound images retain amazingly high resolution, and there's plentiful power in reserve for those massive peaks in your music, at any frequency and in either or both channels, always.

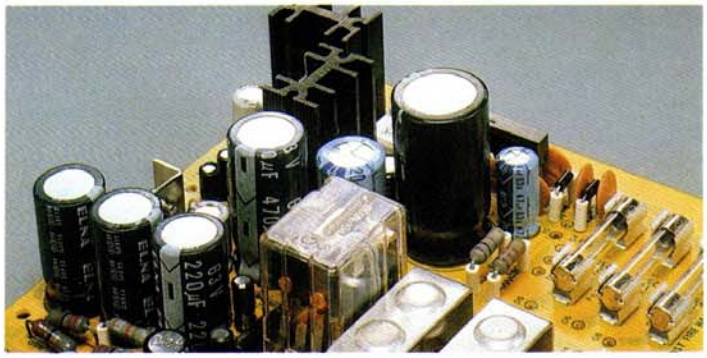
"SAFE" INDICATOR—Your assurance of full protection in the case of power-related mishaps.

You'll note that the front panel of the G-7700 has a little green indicator with the word "Safe." This means that when the indicator is lighted, the circuits inside the power amp are stabilized and the receiver is ready to use.

If the light goes out, the built-in dual-function protector circuit built around a reliable IC has been triggered:

(1) DC detection protector circuit: The moment a DC current exceeding a prescribed value appears in the output, this circuit instantly opens the output circuit by a relay to protect your speaker systems.

(2) Overcurrent detection protector circuit: Whenever overcurrent due to speaker terminal shorts, etc., is detected, this circuit instantly opens the output circuit via a relay and prevents the overcurrent from flowing to your speaker systems. Additionally, the protection team eliminates power-on pop noise.



High-precision phono equalizer with advanced differential input achieves high 250mV overload.

What goes in...And what it goes *into* is equally important. Here the input is an advanced and highly stable differential stage, followed by a two-stage Darlington-connected class-A amplifier. Records are reproduced with flat frequency response, natural transients and no added distortion.

Specifications? Also superb. Selected, precision components help keep RIAA deviation within ±0.2dB across the 20 to 20kHz range. Phono overload is a high 250mV. Hum/noise ratio is 78dB. All in all, the fine-grained musical texture and sharp sound-image location are maintained at the output. What goes in...comes out clean.

BASS/TREBLE tone controls have a defeat switch.

When tonal adjustments are called for to help you achieve a flat response in your particular listening room, or to suit a particular program source, the G-7700 offers NF-type BASS/TREBLE controls with broad control range, sharp control curves and minimum distortion.

The tone control circuit itself is built around a differential input with four low-noise transistors. But this circuit is put off line when you use the DEFEAT switch; in fact, bypassing (via a resistor) the tone controls is the *normal* operational mode of this high quality hi-fi component, as you can tell from the design of the front panel switch.

Hear any source while dubbing tapes.

The G-7700 is perhaps more versatile, even, than some expensive preamps. For we've equipped it with a trio of knobs offering a number of combinations and applications. They are the "SOURCE/MONITOR," "TAPE MONITOR 1" and "TAPE MONITOR 2" switches.

You can hear a program source through your speaker systems while dubbing from Deck 1 to 2. Dubbing may be done also from Deck 3 (a deck connected through the TAPE/AUX terminals for playback only) to either Tape 1 or 2 (or both).

Mic Mixing lets you take an active part in hi-fi creativity.

A separate microphone level control is provided next to the mic input jack to help you balance live sounds (such as your own voice) with any other source coming from the speaker systems. (Recording of mixed sound is not possible under normal operation).

Subsonic sounds from warped records, high-frequency "hiss" from tapes—eliminate either without harm to your music.

Extremely useful to you if you own a large record collection is the Subsonic Filter on the G-7700. It cuts low-frequency content (below 16Hz on a 6dB/oct. slope) as caused by warped records and thus prevents possible speaker cone damage. Also useful, especially if your records are old and scratched, or if you play tapes that have no noise reduction processing, is the High Filter (10kHz, 6dB/oct.). Neither filter should harm musical content.

And we haven't forgotten...

- Large Volume/Tuning Controls—The two largest controls on the front panel of the Sansui G-7700 are (right) the tuning knob for FM/AM and (left) the master volume control, the latter featuring 41 clicks for smooth and precise control of output.
- Audio Muting—This instantly reduces sound volume by 20dB; the receiver may be operated with the switch in to give you a finer "feel" in volume control when inputs are of sufficient strength.
- Loudness—Achieves natural tonal balance during low-level listening.
- Two Phono Inputs—Selectable for playing two stereo turntables.
- Speaker Selection—You may connect and drive up to two stereo sets of speaker systems individually or together, or turn both off for listening through headphones.

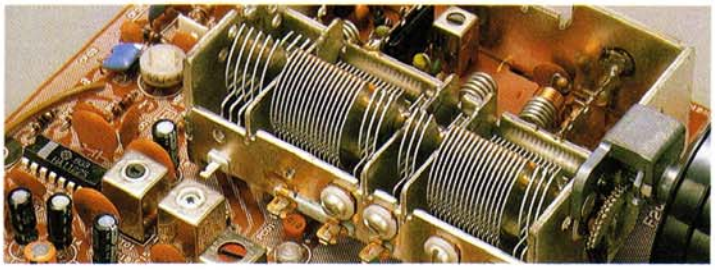
Strictly Hi-Fi Tuner section *effectively* reproduces both FM *and* AM stations with maximum clarity and range, higher sensitivity and lower distortion.

Dual-Gated MOS FET: Greatly increased sensitivity in FM frontend.

In the G-7700 receiver, Sansui has lived up to its reputation for building *strictly* hi-fi tuners—tuners that *receive* radio signals with high accuracy and *reproduce* them with maximum tonal quality. This is further assured with the use of the Sansui-exclusive, patented Digitally Quartz-Locked Tuning System described elsewhere in this brochure.

Preserving tonal quality begins in the FM frontend where radio signals are first received. We've used a low-noise, dual-gated MOS FET in conjunction with a precision, frequency-linear, four-ganged variable capacitor. The combination achieves very high sensitivity to faint signals (the 50dB Quieting Sensitivity is 36dBf in stereo). Effective rejection of radio-frequency inter-modulation is also achieved so that received FM signals are passed on to the following circuits with a minimum of noise.

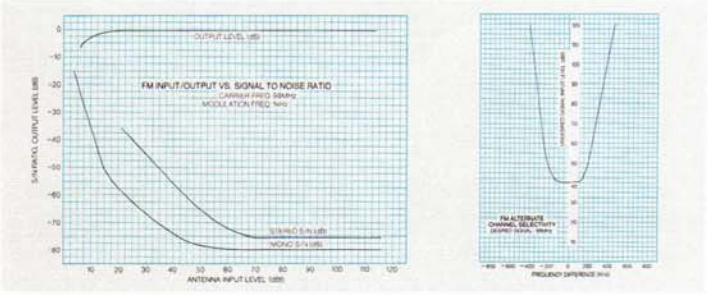
Tracking error in the local oscillator/variable capacitor section is eliminated with the quartz/digital system. Therefore, changes in temperature/humidity can never affect tuning accuracy.



Pinpoint selectivity is assured in the advanced FM IF circuit.

There are precision ceramic filters in the two-stage IF amplifier, itself of a design that assures excellent phase and group-delay characteristics. Then, an IC-formed two-stage limiter eliminates AM noise for still cleaner sound.

Sansui also uses a newly-developed Adjacent Channel Filter and our new Quadrature Detector in the discriminator. These help reduce noise and distortion over a wide frequency spectrum—meaning that the station you want can be pulled in with satisfying results under even the most difficult of reception conditions.



High-performance IC in the FM discriminator for higher linearity.

As you read engineering manuals and circuit descriptions for FM tuners you will time and again come across the word "linearity." It's a very important word in FM since tuner circuitry must always be in line with the characteristics of the signals it receives and processes. In the G-7700 FM section, we've raised linearity to new heights with the use of quality-controlled ICs.

In the FM discriminator, for instance, a high-performance IC helps translate frequency deviations into amplitude variations to retrieve audio signals. Inside this microscopic IC is a three-stage amp, a discriminator and a meter circuit. The IC is then combined with a double-tuning coil to form our quadrature detector offering high linearity and better IF rejection.

Better FM stereo separation thanks to PLL MPX circuit.

There's only one way to be positive you are getting maximum stereo separation in FM. And that's to have faith in your tuner's MPX or multiplex demodulator. In the G-7700 we've used an advanced PLL or Phase-Locked Loop type circuit in a high-performance IC to justify your confidence.

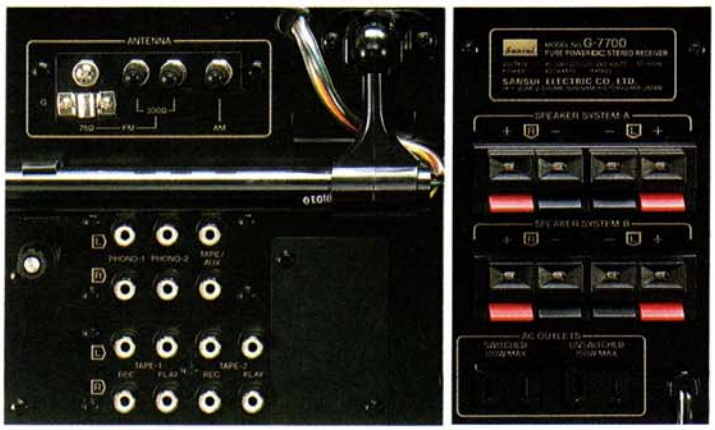
AM for people who hate AM.

We can't do much about the quality of AM *programming*. But we can (and *do*) do a lot to improve the quality of AM *sound*. Here, tuning your AM station is easier because we use a frequency-linear, double-ganged variable capacitor. High linearity and AM selectivity are assured with a bi-resonator ceramic filter and a high-performance IC (equivalent to 20 transistors) in the IF circuit for AM.

AM sound is further improved (and the frequency response widened) by carefully choosing the grounding points for the circuitry throughout the receiver. And we've included an omni-directional AM ferrite bar antenna (rotatable in any direction) for still more improvements in AM reception.

Two more Sansui features for good listening...

- FM Muting Switch—Eliminates annoying inter-station noise while tuning FM.
- Dolby De-Emphasis Switch—For putting on line a special 25μSec. de-emphasis circuit for an FM Dolby adaptor.



QUARTZ

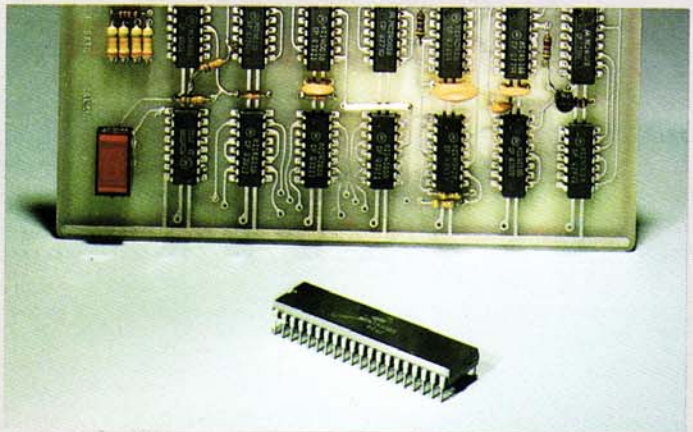
Stations CANNOT go adrift with Sansui's patented Digitally Quartz-Locked Tuning System.

This is a Sansui-exclusive feature. The Sansui quartz system uses an accurate "time base"—the timing counter on a quartz crystal—to help keep the FM station you want locked in via a circuit loop monitored by a digital processor. If the station tries to drift out of tune, the error is detected by a frequency counter and converted into digital data "bits." These, in turn, are used to bring the station back into line instantly.

Most other quartz tuners use analog phase reference controls that compare phase of two frequencies between the local oscillators and quartz crystals, in order to check and correct errors. But our Digitally Quartz-Locked Tuning System doesn't; instead it has a digital control system. It uses the "time base" generated in the quartz crystal, and detects errors by *digitally* counting the frequency on this undeviating reference. Therefore, unlike other quartz tuners using analog reference controls, ours avoids harmonics harmful to accurate tuning with the use of a digital reference control.

Better spurious rejection ratio, higher sensitivity and a better signal-to-noise ratio are among the audible advantages. And purer, more faithful reproduction of musical sound is the final product.

A reminder: Sansui has received patents on our quartz/digital system. And to ensure long-term reliability of its operation we've packed it all in a single LSI (Large-Scale Integrated Circuit) which can never fail.



The Large-Scale Integrated Circuit (LSI) you see in the foreground now compactly houses all the discrete parts, wiring and ICs grouped behind it. This Sansui innovation assures computer-grade reliability in our Digitally Quartz-Locked Tuning System.

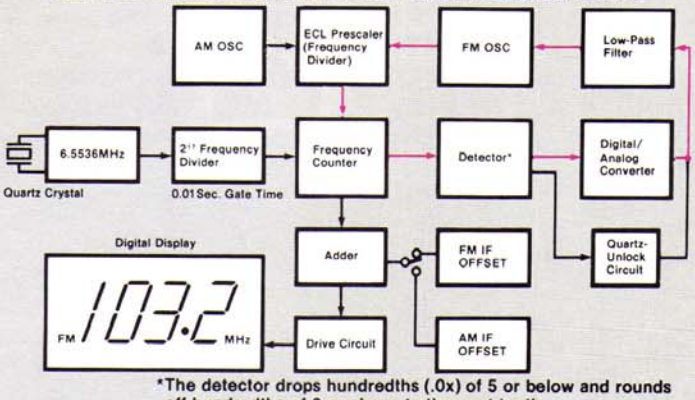
Unique Locking System: Your station is digitally quartz locked the moment you stop moving the tuning knob.

Another Sansui-exclusive innovation sets our locking system apart from others. And makes the G-7700 a whole lot easier to use. Your locked-in station *stays* locked in until you move the tuning knob.

Many "locking" tuners and receivers use a touch-sensitive knob which acts as an on/off switch for the locking system. This means your fingers must grasp, then release, then grasp and again release the knob—repeating this troublesome process until you're sure your station is tuned and locked. In the Sansui system, however, the locking on/off switching is determined not by touch but by movement.

And a reminder: This Sansui-exclusive tuner circuitry includes a built-in RE-LOCK system. Your station is memorized for instant recall whenever you re-power the unit.

BLOCK DIAGRAM OF SANSUI DIGITALLY QUARTZ-LOCKED TUNING



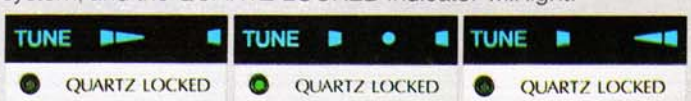
*The detector drops hundredths (.0x) of 5 or below and rounds off hundredths of 6 or above to the next tenth.

FM/AM Tuning Dials: We provide a bright and clean digital display PLUS the traditional analog rule-scale.

The Sansui FM quartz/digital system has a wider locking range than most. And the analog dial scale is wide and extremely clearly calibrated in FM-linear sections to make that tuning smoother and easier still.

But when the station you want is faint, or "crowded" between others, make a note of its assigned frequency, then simply dial that frequency on the bright digital display. As you do, watch the row of dots to the left of the display: these indicate signal strength (for AM and FM), the more showing, the better.

For FM tuning, also watch the lower left part of the digital display. The righthand and lefthand arrows show when you are nearing the station's best position; the center dot lights (and the arrows go dark) when you have tuned to the exact center of the station. Now, stop moving the knob and your station will be automatically locked by the Sansui-patented quartz/digital system, and the QUARTZ LOCKED indicator will light.



Detuning | Fine-Tuning | Detuning

Specifications

AUDIO SECTION

POWER OUTPUT*
Min. RMS, both channels driven, from 20Hz to 20,000Hz, with no more than 0.025% total harmonic distortion
120 watts per channel into 8 ohms
Min. RMS, both channels driven, at 1,000Hz, with no more than 0.025% total harmonic distortion
130 watts per channel into 8 ohms

TOTAL HARMONIC DISTORTION*
OVERALL (from AUX) — less than 0.025% at or below rated min. RMS power output
OVERALL (from AUX) — less than 0.015% at 1kHz, 120W power output

INTERMODULATION DISTORTION
(70Hz:7,000Hz=4:1 SMPTE method)
OVERALL (from AUX) — less than 0.025% at or below rated min. RMS power output

DAMPING FACTOR — 80 into 8 ohms at 50Hz, 50 into 8 ohms
LOAD IMPEDANCE* — 8 ohms
SLEW RATE — 60V/μSec.
RISE TIME — 1.4μSec.
FREQUENCY RESPONSE (at 1 watt)
POWER AMP SECTION — DC to 200,000Hz +0dB, −3.0dB
OVERALL (from AUX) — 5 to 75,000Hz +0.2dB, −2.0dB
RIAA CURVE DEVIATION (20 to 20kHz) — +0.2dB, −0.2dB

HUM AND NOISE (IHF)
PHONO — 78dB
AUX — 95dB
CHANNEL SEPARATION (at 1,000Hz)
PHONO — 60dB
AUX — 65dB
INPUT SENSITIVITY AND IMPEDANCE (at 1,000Hz)
PHONO 1, 2 — 2.5mV, 47k ohms
AUX — 150mV, 47k ohms
MIC — 6mV, 10k ohms
(PHONO: Max. input capability more than 250mV RMS at 0.1% distortion)
OUTPUT VOLTAGE AND IMPEDANCE (at 1,000Hz)
TAPE REC (PIN) — 150mV, 47k ohms
CONTROLS
BASS — +10dB, −10dB at 50Hz
TREBLE — +10dB, −10dB at 10kHz
LOUDNESS — +8dB at 50Hz, +6dB at 10kHz
FILTERS
SUBSONIC — −3dB at 16Hz (6dB/oct.)
HIGH — −10dB at 10kHz (6dB/oct.)
MUTING (Audio) — −20dB

FM SECTION

TUNING RANGE — 88 to 108MHz
50dB QUIETING SENSITIVITY
MONO — 14dBf (2.8μV IHF T-100)
STEREO — 36dBf (34.7μV IHF T-100)
SENSITIVITY
MONO (IHF) — 9.8dBf (1.7μV IHF T-100)
(DIN) — 1.0μV
STEREO — 17dBf (3.9μV IHF T-100)
SIGNAL TO NOISE RATIO AT 65dBf
MONO — 76dB
STEREO — 71dB

FREQUENCY RESPONSE
MONO — 30 to 15,000Hz +0.5dB, −1.0dB
STEREO — 30 to 15,000Hz +0.5dB, −1.0dB
DISTORTION AT 65dBf
MONO — less than 0.1% at 100Hz; less than 0.1% at 1,000Hz; less than 0.25% at 6,000Hz
STEREO — less than 0.23% at 100Hz; less than 0.15% at 1,000Hz; less than 0.23% at 6,000Hz
CAPTURE RATIO — 1.0dB
ALTERNATE CHANNEL SELECTIVITY — 70dB at 400kHz
SPURIOUS RESPONSE RATIO — 90dB at 98MHz
IMAGE RESPONSE RATIO — 70dB at 98MHz
IF RESPONSE RATIO
Balanced — 95dB at 98MHz
RF INTERMODULATION — 60dB at 98MHz
AM SUPPRESSION RATIO — 50dB at 98MHz
STEREO SEPARATION — 35dB at 100Hz; 42dB at 1,000Hz; 30dB at 10,000Hz
ANTENNA INPUT IMPEDANCE — 300 ohms balanced; 75 ohms unbalanced

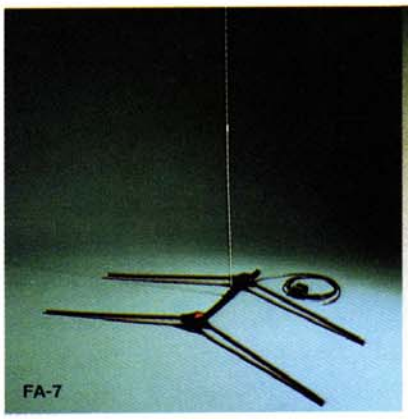
AM SECTION

TUNING RANGE — 530 to 1,600kHz
SENSITIVITY (Bar antenna) — 50dB/m (300μV/m)
SELECTIVITY — 33dB at 1,000kHz
SIGNAL TO NOISE RATIO — 46dB
TOTAL HARMONIC DISTORTION — less than 0.5% at 30% Mod. 80dB/m
IMAGE RESPONSE RATIO — 46dB at 1,000kHz
IF RESPONSE RATIO — 38dB at 1,000kHz

GENERAL

AC OUTLETS — switched max. 100 watts; unswitched total 150 watts
SEMICONDUCTORS — 95 Transistors; 70 Diodes; 5 FETs; 12 ICs
POWER REQUIREMENTS
POWER VOLTAGE — 100, 120, 220, 240V 50/60Hz
POWER CONSUMPTION — 430 watts
DIMENSIONS — 505mm (19 15/16") W; 182mm (7 3/16") H; 422mm (16 5/8") D
WEIGHT — 18kg (39.7lbs.) Net; 20.5kg (45.2lbs.) Packed
FINISH — Simulated rosewood grain

*Power specifications measured pursuant to U.S. Federal Trade Commission trade regulation on power output claims for amplifiers.
- The FM performance of this receiver is measured pursuant to the new Institute of High Fidelity standard, IHF-T-200, except specifications with the legend IHF-T-100.
- For European models, some specifications might change to comply with local safety regulations and standards.
- Design and specifications subject to change without notice for improvements.
- Digitally Quartz-Locked System: U.S. Pat. No. 3991382.



FA-7 Compatible FM/AM Antenna System

PS-107C/112C Wide-Range Triaxial Speaker Cables

PS-4C/5C Hi-Fi Pin Cords
PS-6C/7C Stereo/Mono Phone Plug Cords
PS-1P/2P Extension Plug Adaptors

Sansui

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Printed in Japan (M9005K2)