

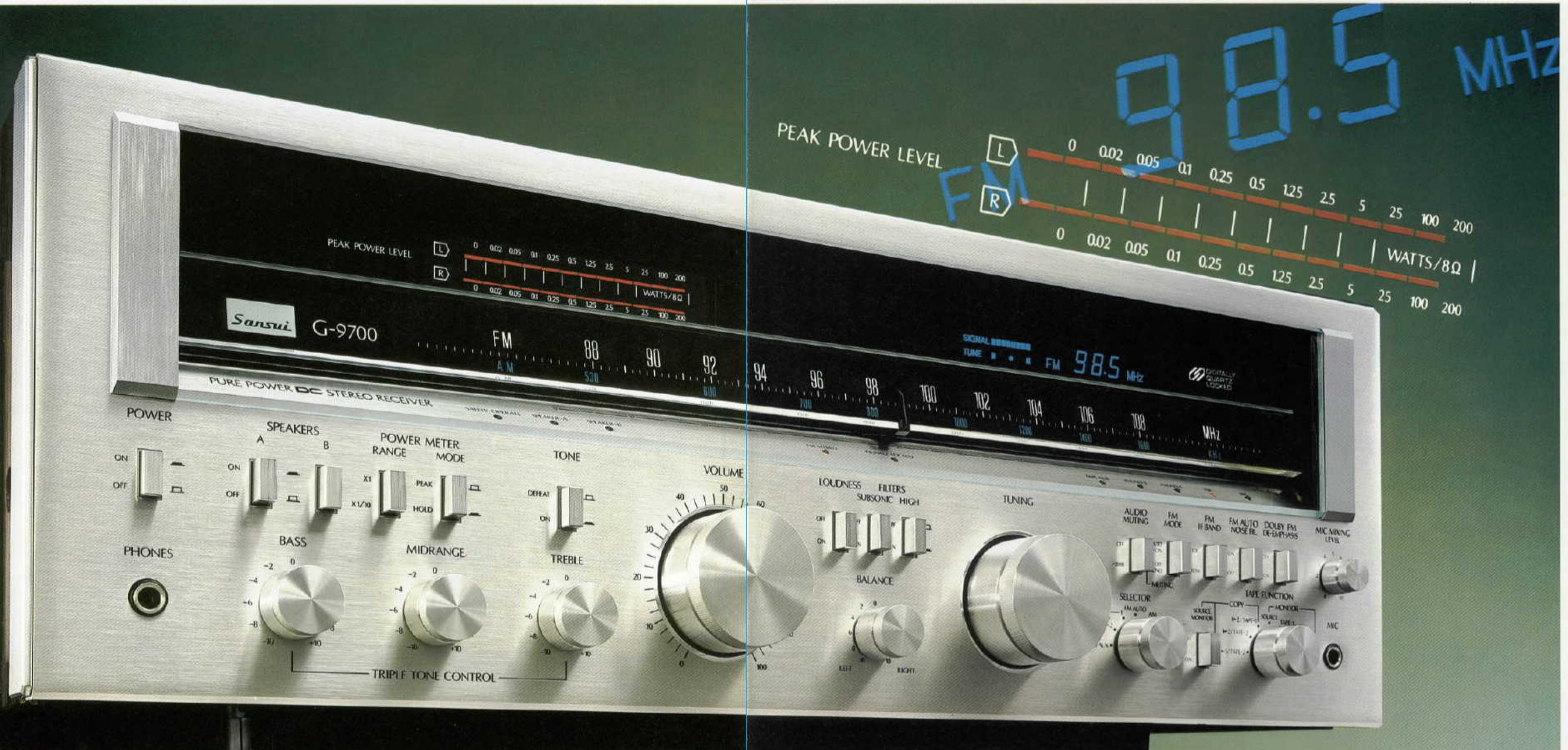
G-9700

Sansui Pure Power DC FM/AM Stereo Receiver with Exclusive Digitally Quartz-Locked Tuning System, 200 Watts/Ch, 20 to 20kHz, at 8 ohms, 0.02% THD.

Sansui

Only hi-fi, everything hi-fi.

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



The Sansui G-9700: Top-of-the-Line in Pure Power DC Stereo Receivers with Digitally Quartz-Locked Tuning.

Today's wide-range, low-noise/distortion musical sources demand a high degree of technical expertise in high fidelity equipment. This is especially true in receivers. You can depend on the G-9700 to deliver pure musical reproduction from virtually any program source because it is the top model in our new series—the best you can buy.

But don't just take our word for that. As you shop around, compare the G-9700 with the others carefully. First, look (and listen, too) for accurate tuning. In the Sansui G-9700 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. Even AM sounds better.

Look (and listen), then, for pure power amplification. In the Sansui G-9700 it's achieved with our Pure Power DC amp—so good at fighting TIM and other kinds of distortion. Power delivery is a massive 200 watts per channel, min. RMS, both channels driven into 8 ohms, from 20 to 20,000Hz, with no more than 0.02% total harmonic distortion.

Your choice is bound to be the DC receiver with the digital dial, from Sansui, where it's *all* hi-fi.

Lower TIM and THD plus higher Slew Rate and faster Rise Time are delivered in this Pure Power DC Amplifier section.

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.

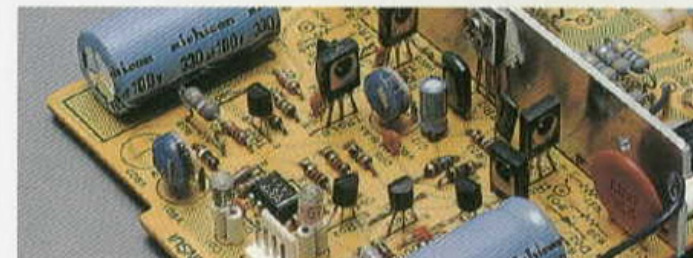
TIM, of course, is Transient Intermodulation distortion, particularly harmful to musical signals. Sansui's original DC amplifier technology in the G-9700's power amp section keeps TIM under control. That technology also improves the slew rate to a high 80V/μSec. and the rise time to an excellent 1.4μSec.—both very instrumental in helping the amp respond more quickly and more accurately to the *pulsive* musical signals.

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 0.02% and DC—200kHz.

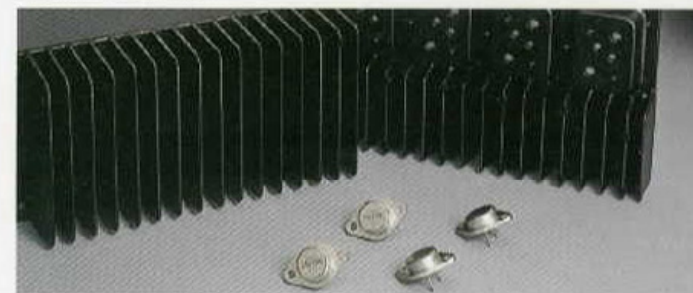
We use the same special DC amp techniques in our very best separate stereo amplifiers.

The G-9700 is no ordinary receiver. Its power amplifier section is modelled on techniques we use in our best separate amplifier components and in our professional-use equipment, where the emphasis is on high-power output with excellent transient response.

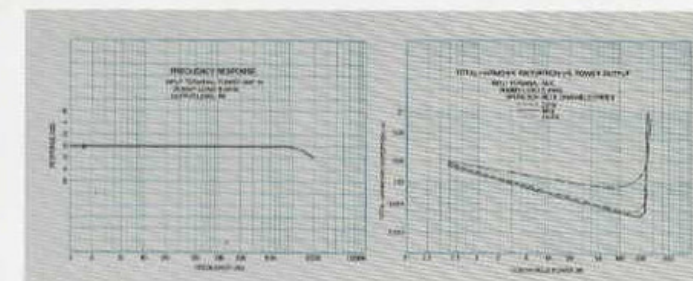
The input of the power amp is a Sansui-developed Dual-FET differential. This is followed by another differential with a current-mirror loaded, cascode-connected amplifier of low-noise transistors, a current differential pushpull driver amplifier (patent pending), a three-stage differential amplifier, and, finally, a three-stage Darlington-connected OCL output circuit that holds four large power transistors of excellent linearity in parallel in each channel.



DC Power Circuit Board



Heat Sinks & Power Transistors



LED

Peak Power-Level Display: Two rows of 12 LEDs flash instant-by-instant output power.

For power output indication on the G-9700 we've chosen a newly-designed Peak Power-Level Display.

Our display has one row of 12 bright red LEDs for each channel, more than any other meter of its type. As power output increases, the LEDs flash to provide accurate and useful indication. And you may select either the wide-range 0.02 to 200 watts reading or switch the meter's sensitivity to read from a tiny 0.002 watts up to 20 watts (during low-level listening).



SLEW RATE & RISE TIME (Power Amp)

A CONVENTIONAL RECEIVER

Slew Rate: 2.1V/μSec.
Rise Time: 4μSec.

G-9700

Slew Rate: 80V/μSec.
Rise Time: 1.4μSec.

Reception is sharper and reproduction cleaner in both FM and AM in this STRICTLY hi-fi tuner.

FM Frontend: Dual-gated MOS FET and 4-Gang Capacitor improve FM sensitivity.

We've used an elaborate 4-gang tuning capacitor of high-precision, frequency-linear design. It teams up with a low-noise, dual-gated MOS FET to achieve a very high sensitivity to faint FM signals. (The 50dB Quieting Sensitivity is 35dBf in stereo.) Then, FM signals are passed on to the following circuits with a minimum of noise because the team achieves very effective rejection of radio-frequency intermodulation.

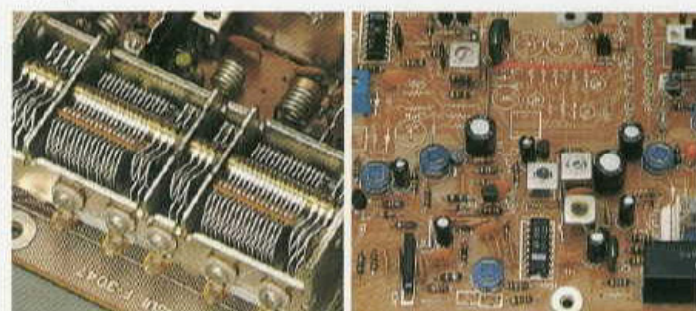
By the way, changes in temperature and humidity can never affect tuning accuracy because tracking error in the local oscillator/variable capacitor section is eliminated with our quartz/digital system.

Selectable IF: You switch for WIDE or NARROW for hi-fi FM anywhere.

When receiving a strong FM station you'll want to use the WIDE position of the IF bandwidth selector switch. This will ensure low distortion, wide stereo separation a better capture ratio and so forth. But when the station you want is distant or weak, or when local interference is high, switch to NARROW. Selectivity is pinpointed so that your station can be heard with optimum hi-fi quality.

Backing up this convenience is a special bi-resonator ceramic filter (for NARROW) which improves selectivity, and three bi-resonator ceramic filters (for WIDE) which strip off noise and interference.

A final Sansui touch is found in the effective Group-Delay Equalizer circuit in the IF. It reduces group delay to achieve flat phase response and thus lower the distortion content dramatically.



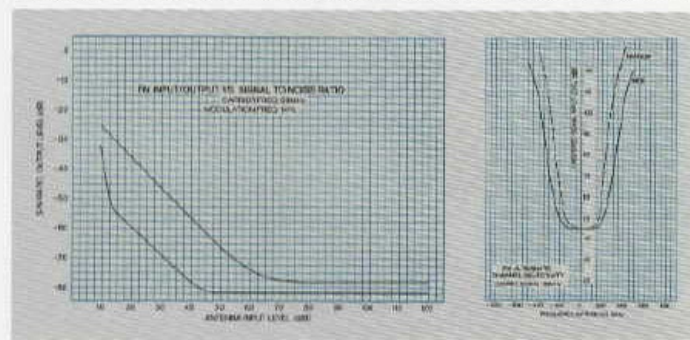
FM Frontend

IF Circuit Board

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-9700 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.



PLL FM Multiplex Demodulator gives low distortion, wide dynamic range in FM stereo sound.

That the PLL (Phase-Locked Loop) system FM multiplex demodulator retains its superior demodulating performance against changes in temperature or time lapse is well known, as are its primary advantages of low distortion and a wide dynamic range. In the G-9700, Sansui has gone a step ahead and refined the related, peripheral circuits around the IC so that the PLL demodulator operates under the most optimum conditions. The result is FM stereo perfection.

New FM Auto Noise Filter activates automatically, eliminates noise, assures clean FM sound.

The LED or Light-Emitting Diode is automatically activated when and if the strength of a tuned-in broadcast signal falls below a pre-determined level for any reason, such as when an overhead airplane reflects out-of-phase signals toward your antenna. The light of the LED is detected by a cadmium sulfide or CdS cell and the resulting filter action improves the audible signal-to-noise ratio by more than 10dB automatically.

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.

Two more Sansui features for good listening...

- FM Muting Switch—Eliminates annoying inter-station noise while tuning FM. Use OFF when receiving distant stations in mono.
- Dolby De-Emphasis Switch—For putting on line a special 25µSec. de-emphasis circuit for an FM Dolby adaptor.

Power Supply: Toroidal transformer is a dramatic improvement over conventional types.

A huge, well-regulated toroidal 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-9700 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 triple-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.
- (3) Thermal detection protector relay: A special device detects the temperature of the heat sinks, and whenever it exceeds a prescribed temperature, operates the relay to cut off the output circuit and protect the power transistors.



High-precision phono equalizer with advanced differential input achieves high 280mV overload.

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 ± 0.2 dB across the 20 to 20kHz range. Phono overload is a high 280mV. 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.

Triple Tone Control: A Sansui exclusive with midrange control and defeat switch for versatility.

Did you know that the *fundamental* sound of nearly all musical instruments, including the human voice, fall into what

is known as the "midrange" frequencies in the sound spectrum? Ordinary BASS/TREBLE tone controls cannot directly influence that range. Our MIDRANGE control can, and does without the slightest addition of noise and distortion (and without subtracting musical content).

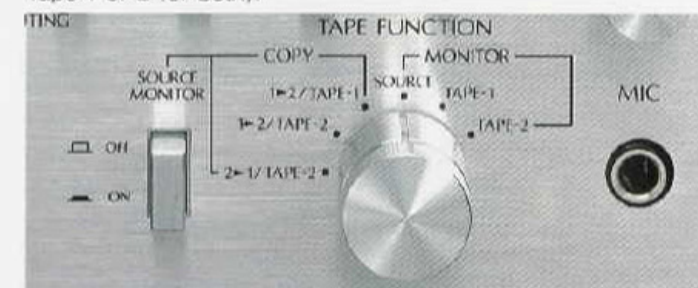
The three-control backup circuit is an NF-type/flat amp with an advanced differential input and current-mirror source. It uses five transistors for each channel to ensure accuracy. Tonal imbalance between the channels and overall noise/distortion are avoided with the use of precision parts.

A DEFEAT switch is provided to instantly cancel all tone control adjustments without having to move the three switches back to their "0" positions; it puts the circuit entirely off line via a resistor for an instant "flat" response relative to the input.

Tape/Dub Facilities: Record, monitor or dub on two stereo tape decks.

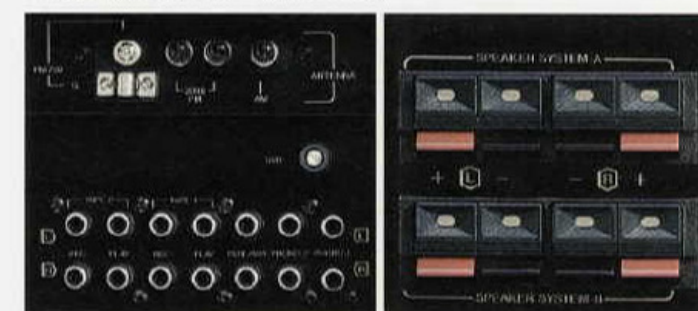
The Sansui G-9700 is perhaps more versatile, even, than some expensive preamps. For we've equipped it with a trio of knobs offering a number of combinations and applications. They are the "SOURCE MONITOR," "TAPE MONITOR 1" and "TAPE MONITOR 2" switches.

You can hear a program source through your speaker systems while dubbing from either deck to the other. 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).



And we haven't forgotten...

- Mic Mixing—Own level control.
- Subsonic/High Filters—They cut low and high frequency content respectively.
- Audio Muting—This instantly reduces sound volume by 20dB.
- Loudness—Achieves natural tonal balance during low-level listening.
- Two Phono Inputs—Selectable for playing two stereo turntables.
- Speaker Selection—A, B, A+B.



QUARTZ



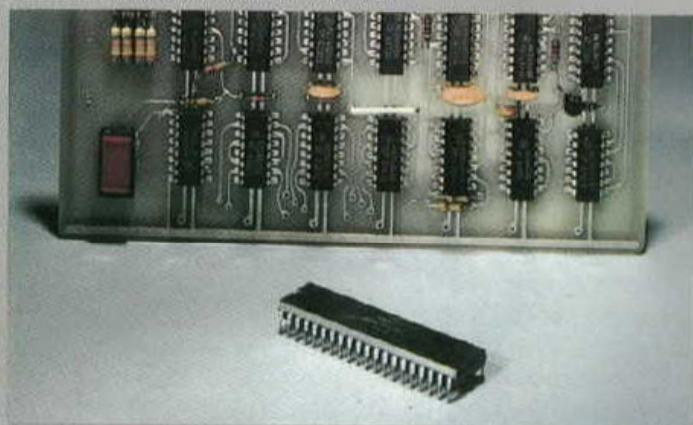
Stations CANNOT go adrift with Sansui's patented Digitally Quartz-Locked Tuning System.

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.

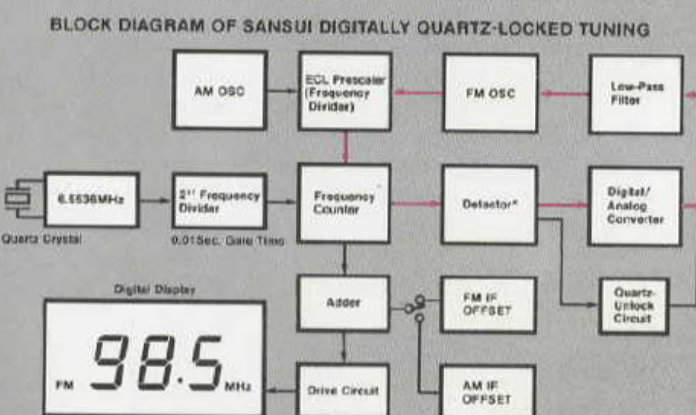
Unique Locking System: Your station is digitally quartz locked the moment you stop moving the tuning knob.

Another Sansui-exclusive innovation sets our locking system apart from others. And makes the G-9700 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.



*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.



Specifications

AUDIO SECTION POWER OUTPUT*

Min. RMS, both channels driven, from 20Hz to 20,000Hz, with no more than 0.02% total harmonic distortion

200 watts per channel into 8 ohms

Min. RMS, both channels driven, at 1,000Hz, with no more than 0.02% total harmonic distortion

220 watts per channel into 8 ohms

TOTAL HARMONIC DISTORTION*

OVERALL (from AUX) less than 0.02% at or below rated min. RMS power output

less than 0.005% at 1kHz, 200W power output

INTERMODULATION DISTORTION

(70Hz, 7,000Hz=4:1 SMPTE method)

OVERALL (from AUX) less than 0.02% at or below rated min. RMS power output

8 ohms

LOAD IMPEDANCE*

DAMPING FACTOR

80 into 8 ohms at 50Hz,

60 into 8 ohms from 20 to 20kHz

80V/μSec.

1.4μSec.

FREQUENCY RESPONSE

(at 1 watt)

POWER AMP SECTION DC to 200,000Hz +0dB, -3.0dB

OVERALL (from AUX) 5 to 80,000Hz +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 70dB

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 280mV RMS at 0.1% distortion)

OUTPUT VOLTAGE AND IMPEDANCE (at 1,000Hz)

TAPE REC (PIN) 150mV, 47k ohms

CONTROLS

BASS +10dB, -10dB at 50Hz

MIDRANGE +5dB, -5dB at 1.5kHz

TREBLE +10dB, -10dB at 10kHz

LOUDNESS +8dB at 50Hz

+6dB at 10kHz

FILTERS

SUBSONIC -3dB at 16Hz (6dB/oct.)

HIGH -3dB at 3kHz (6dB/oct.)

AUDIO MUTING -20dB

FM SECTION

TUNING RANGE

50dB QUIETING SENSITIVITY

MONO 12.5dBf (2.3μV IHF T-100)

STEREO 35dBf (31μV 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 82dB

STEREO 76dB

FREQUENCY RESPONSE

MONO

30 to 15,000Hz +0.2dB, -1.0dB

STEREO

30 to 15,000Hz +0.2dB, -1.0dB

DISTORTION AT 65dBf

MONO

less than 0.05% at 100Hz

less than 0.05% at 1,000Hz

less than 0.06% at 6,000Hz

less than 0.1% at 100Hz

less than 0.07% at 1,000Hz

less than 0.08% at 6,000Hz

STEREO

CAPTURE RATIO

ADJACENT CHANNEL SELECTIVITY

NARROW 18dB at 200kHz

ALTERNATE CHANNEL SELECTIVITY

WIDE 60dB at 400kHz

NARROW 80dB at 400kHz

SPURIOUS RESPONSE RATIO 95dB at 98MHz

IMAGE RESPONSE RATIO

Balanced 95dB at 98MHz

IF RESPONSE RATIO

65dB at 98MHz

RF INTERMODULATION

60dB at 98MHz

AM SUPPRESSION RATIO

40dB at 100Hz

STEREO SEPARATION

45dB at 1,000Hz

35dB at 10,000Hz

30dB from 30 to 15,000Hz

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 (±10kHz)

30dB at 1,000kHz

SIGNAL TO NOISE RATIO

50dB

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 300 watts

115 Transistors; 51 Diodes;

5 FETs; 11 ICs; 21 LEDs

SEMICONDUCTORS

POWER REQUIREMENTS

POWER VOLTAGE 100, 120, 220, 240V 50/60Hz

POWER CONSUMPTION

600W

DIMENSIONS

560mm (22 1/8") W

201mm (7 7/8") H

495mm (19 1/2") D

22.2kg (48.9 lbs.) Net

24.8kg (54.7 lbs.) Packed

simulated rosewood grain

WEIGHT

FINISH

*Power specifications measured pursuant to U.S. Federal Trade Commission trade regulations 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



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