

ONKYO®**STEREO RECEIVER**model **234**

A high performance tuner and powerful amplifier. Both make up one aesthetically pleasing and attractive unit.

Onkyo is proud to offer Model 234 to those interested in the latest advances in stereo receivers. The two main sections of the receiver, a high-grade tuner and direct coupled power amplifier, contain all the components that are needed to put this unit in the top class of fine receivers.

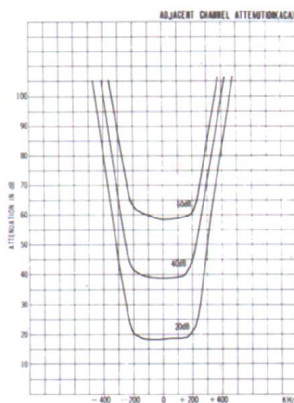
Performance is a key-word in Onkyo's vocabulary and Model 234 easily out-performs any ordinary stereo receiver. It boasts a sensitivity of 2.5 μ V (FM). Distant or weak stations can be pulled in with ease so you have a greater choice of stations. S/N (Signal to Noise Ratio) is greater than 60 dB which means that the music is true to the original and gets to your speakers without a lot of disturbing and irritating noise. The preamplifier is capable of handling a big phono overload so that sudden loud sounds will cause no distortion.

Low noise silicon transistors in the equalizer stages do away with self generating noises. RIAA deflection is less than ± 0.5 dB from 30 to 15,000 Hz. Precisely calculated differential amplifier circuitry is used in the power amplifier section. All-stage direct coupling adds to the fine results delivered by Model 234. The attractive front panel contains the revolutionary Distortion-null meter which does the job of the usual two meters and makes tuning much easier and more convenient. In short, Model 234 reproduces any sound, faithful in every detail to the original creation of the artist. Onkyo's years of experience and carefully selected components are all major ingredients and they make Model 234 an outstanding Stereo Receiver.

Artistry in sound **ONKYO®**

ONKYO®**model 234 STEREO RECEIVER****Tuner section Performance Statistics**

The proof of the pudding is in the eating and the proof of a good receiver is in its performance and great performance is what Model 234 promises. It has a frequency response from 20 to 15,000 Hz (± 1 dB) so that any tone in the audible range can be reproduced by this receiver. This is done with a minimum of distortion too—it is less than 0.5% for FM mono and 0.8% for FM stereo. Weak and distant stations can be easily and clearly received because of its extreme sensitivity of $2.5 \mu\text{V}$ (FM) and S/N (Signal to Noise ratio) of 60 dB.

**Front-end Section**

Above average sensitivity, high S/N, image rejection and spurious signal rejection are just a few of the things the front-end has to perform exceptionally well.

The 3 gang frequency-linear variable capacitor helps to pin-point any station with extreme exactness and ease.

The FET's (Field Effect Transistor) have a high input impedance and linearity and so help to keep the tuner free from cross-modulation.

All of this results in sensitivity of $2.5 \mu\text{V}$ (FM) and a S/N of 60 dB.

IF Stage

The newly designed and developed IF stages of Model 234 incorporate 2 sets of differential amplifiers and 4 ceramic filters instead of the usual coil and capacitor filters. This use of the new type ceramic filters ensures very precise selectivity for the receiver. The IF stages are designed to offer the required selectivity. This is needed so that undesirable signals from nearby stations are not passed on to cause interference and irritating disturbance.

Detector

The ratio detector of Model 234 is very excellent and so assures an exceptionally wide bandwidth along with perfect linearity. This is very important especially when the FM signal is converted into an audio signal. The detector is one of the many and important components that does its part to faithfully bring the good sounds to your living room. Combined with the elaborate front-end and IF stages Model 234's harmonic distortion is as low as 0.5% (mono) and 0.8% (stereo).

Automatic FM MPX Section

Model 234 has an Automatic FM MPX section that is one better than other changers. On most receivers the 19 KHz pilot carrier is detected and the unit changes to FM stereo regardless of the strength of the wave. If the signal is too weak, a poor and distorted stereo signal is received. Model 234 does not have this drawback of many receivers. Unlike ordinary receivers it first measures the strength of the wave and if it is not strong enough for good stereo reception it remains in the mono mode automatically. Good music is always coming from your speakers whether it is stereo or mono.

Distortion-null Tuning Meter

Model 234 has only this one Distortion-null Tuning Meter to make tuning a simple and easy operation. It takes the place of the usual two meters, one to indicate signal strength and one for center tuning. When tuning, the Distortion-null Meter indicates the point of least distortion and, at the same time, the point of the strongest signal.

IF Stage, Detector and FM MPX Section

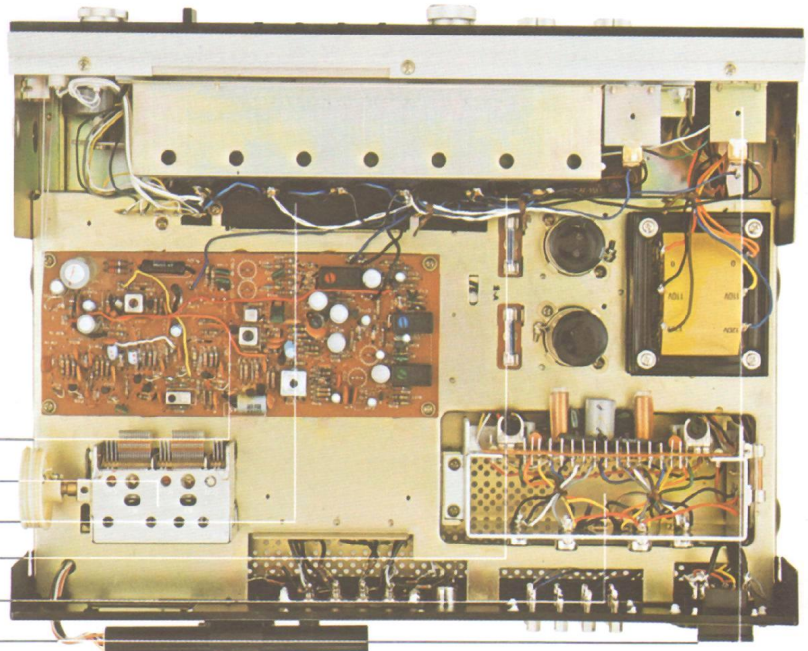
Front-end

Equalizer

Tone controls

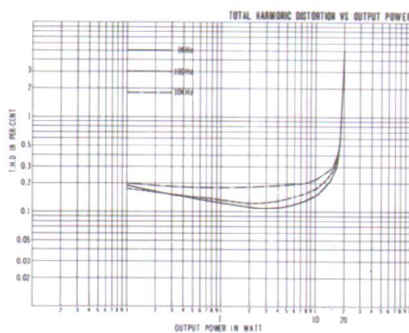
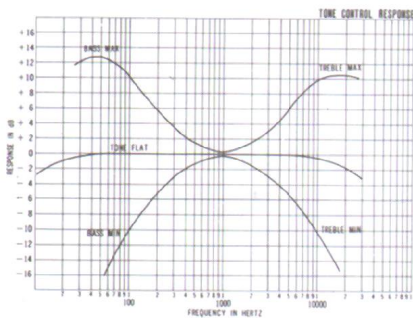
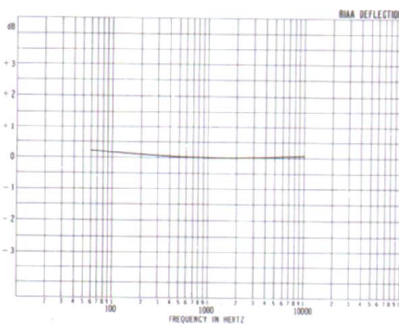
Power Amplifier Section

Tuning Meter



Amplifier section Preamplifier Section

Onkyo has insisted on exclusive components to assure high quality in the preamplifier section. Precise equalization and big phono overload are two features that make this model an outstanding receiver. Each component that leads to exact equalization is carefully calculated and installed. Besides, the direct-coupled equalizer stages use low noise silicon transistors to do away with self-generating noises. The result is a RIAA deflection of less than ± 0.5 dB from 30 — 15,000 Hz and a S/N of better than 60 dB (phono). Big phono overload takes very careful calculation in modern receivers because of the demands put on it. Once overload distorts the signal the rest of the amplifier amplifies this distortion. To guard against this Model 234 has a phono overload protection of 90 mV (1 KHz). Clear disk reproduction is always assured. Bass and treble are usually adjusted for the acoustics of a particular room and to meet individual taste. A low distortion tone control is incorporated into Model 234 to make this operation very simple.



directly to the speakers. Thus, this model has a wider frequency response, better transient response and a high damping factor in the low frequency range.

Transient Response

With new and modern music especially there are many strong and abrupt sounds. This would cause distortion in an ordinary receiver but Model 234 has been designed to give good transient response and so to avoid this distorted sound. This receiver preserves the original wave form and keeps it as close as possible to the original to give faithful reproduction of even loud and often disruptive notes and sounds. An amplifier that can handle any type of wave without deforming it gives the most faithful reproduction. The good transient response of Model 234 is achieved by Onkyo's years of audio experience and know-how. This and advanced circuit technology and carefully selected materials add up to the highperforming Receiver Model 234.

Power Amplifier Section

Highly developed and precisely calculated differential amplifier circuitry is used in Model 234. This exactness in the differential amplifier stages results in perfect 0 V on the speaker terminals. Distortion of the speakers from DC voltage leak can sometimes be a problem. This is completely eliminated in this unit. Changes in voltage and temperature do not affect the operation of Model 234 so stable operation is maintained at all times. All-stage direct coupling is a feature that adds to the excellence of this receiver. No coupling capacitors are used and the signals are fed



Specifications

Type	All Silicon Transistor Integrated Stereo Receiver	less than 0.3% (at rated output 1 kHz) less than 0.2% (at 5 W output 1 kHz)
Circuit	Direct-Coupling and Differential Amplifier, Quasi-Complementary SEPP System	
Semiconductors...	Transistor 39 (1 FET), Diode 32	
Tuner Section		
Tuning Range	FM 88-108 MHz AM 530-1,605 kHz	
Sensitivity	FM 2.5 μ V AM 40 μ V (IHF) 240 μ V/m (IHF) Bar Antenna	
Image Rejection Ratio.....	FM 55 dB (98 MHz) AM 35 dB (1 MHz)	
IF Rejection Ratio	FM 60 dB (98 MHz) AM 35 dB (1 MHz)	
Signal to Noise Ratio	FM 60 dB (IHF) AM 45 dB (30% 1 mV input)	
Adjacent Channel Attenuation.....	better than 60 dB	
AM Suppression Ratio	better than 45 dB	
Capture Ratio	less than 2.5 dB	
Harmonic Distortion ... FM MONO	less than 0.5%	
	ST	less than 0.8%
	AM.....	less than 0.8%
Frequency Response ...	20 Hz~15 kHz (± 1 dB)	
Stereo Separation.....	better than 35 dB (400 Hz)	
Audio Section		
Dynamic Power	40 W (IHF 8 Ω)	
RMS Continuous Power...	12W + 12W (8 Ω 1 kHz)	
Total Harmonic Distortion		
Frequency Response		less than 0.3% (at rated output 1 kHz) less than 0.2% (at 5 W output 1 kHz)
Power Band Width	25 Hz ~ 25 kHz (IHF -3 dB THD 0.3%)	
Input Sensitivity & Input Impedance		
PHONO	2.5 mV (50 K Ω)	
AUX	200 mV (100 K Ω)	
RIAA Characteristics	± 0.5 dB (30 Hz ~ 15 kHz)	
Maximum Allowable Input		
PHONO.....	90 mV (1 kHz)	
Controls		
Bass	± 10 dB (100 Hz)	
TREBLE	± 10 dB (100 kHz)	
Signal to Noise Ratio (IHF C Net Work)		
PHONO	better than 60 dB	
AUX.....	better than 75 dB	
Power Source... AC 110/120/220/240V, 50/60 Hz		
Dimensions	437(W) x 355(D) x 136(H) mm	
Weight	8 kg	
Other for Attachment Circuits		
● FM MONO/STEREO Automatic changer ● Stereo Indicator ● Tuning Meter ● AC Outlet ● SP Terminal (A/B Selector) ● Headphone Jack ● Tape Recording Terminal ● Tape Recording/Playback Connector ● Tape Monitor Switch ● Loudness Switch		
Specifications are subject to change according to improvements without notice.		

ONKYO CORPORATION

Export Division: No.24 Mori Bldg., 23-5, Nishishinbashi 3-chome, Minato-ku, Tokyo, Japan Telex: 242-3551 ONKYO J Phone: Tokyo (03) 432-6981

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