YAMAHA R-9/R-8/R-7

Natural Sound AM/FM Stereo Receiver Low Impedance Drive, High Dynamic Power

Zero Distortion Rule Amplification (R-9, R-8)

New Continuously Variable Loudness Control, Rec Out Selector

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New Computer Servo Lock Tuning System

Digital Fine Tuning (R-9, R-8)

16-Station Random Preset Tuning

Video Input Selectors (R-9, R-8)

Wireless Remote Control Capability

Behind the Superior Yamaha Sound

Yamaha's foundation as a manufacturer spans more than a hundred years in a number of specialized fields. Since the company began as a producer of reed organs, it has expanded steadily until today, Yamaha music instruments, sound reinforcement gear, music education and popularization programs, motor products, sports equipment, and of course, audio products, are renowned worldwide for their highly refined performance. Naturally, the many years spent in intensive research and development in all these fields has resulted in a vast and varied store of technology. Moreover, the finely balanced interrelationship between the many Yamaha in-house technologies, production facilities and product groups creates a highly efficient network than makes it possible to achieve optimum quality and performance in every product.

Yamaha audio know-how, however, does not stop at technology. Each and every new audio product must face the most demanding challenge imaginable: the critical ears of Yamaha music instrument designers. Unless the reproduced sound is exactly like the real thing, the product is not considered finished.

Yamaha gives you vast technology tamed by musical sensitivity – a claim no other audio manufacturer can honestly make.

A NEW RECEIVER GENERATION: THE BEST OF THE PAST, DESIGNED FOR THE FUTURE

Meet the R-9, R-8, and R-7. A new generation of Yamaha Natural Sound AM/FM Stereo Receivers. They maintain the traditional Yamaha emphasis on uncompromising quality, operational sophistication, and style, while incorporating the latest fruits of our research on the frontiers of audio technology. Unique Yamaha features that have been popularly received in earlier models are still here, such as the Computer Servo Lock Tuning system, Rec Out Selector, and Zero Distortion Rule. And we've added some new ones worth getting excited about: low impedance drive, high dynamic power, and a new version of our continuously variable loudness control. If you already know how to identify a great receiver, we won't have any trouble convincing you. If you don't, allow us to present 3 sure ways to get to know one.

R-9/R-8: THE HEART OF A HOME AUDIO/VISUAL SYSTEM

As always, Yamaha is looking to the future—especially, to the new age of audio/visual system integration. These receivers are equipped with input selectors for two video sources, a copy function for tape dubbing, and simulated stereo for adding depth to the mono audio signals which accompany many video sources. Later, we'll explain in detail how you can use these new functions. For now, suffice it to say that with their sophisticated audio features, plus the capacity to access video tape decks and video disc players, these receivers are the ideal core units for a total audio/visual home entertainment system.

Low Impedance Drive Capability

Low impedance drive capability is important for full compatibility with the wide array of speaker systems available today, many of which are rated at 6 or 4 ohms, a relatively low-impedance load. It's also necessary to ensure adequate performance under all operating conditions, since the effective load impedance to the amplifier drops significantly when driving multiple pairs of speakers, and during operation, the actual load impedance can vary to an even lower limit due to the characteristics of the signal itself. If an amplifier is not properly designed to handle these situations, internal protection shutoff circuitry will be activated in response to a low impedance load. The new Yamaha receivers, however, have a carefully engineered power supply and power output stage which ensure that a wide range of low-impedance speaker systems can be driven, multiple pairs of speakers can be driven simultaneously, and fluctuating low-impedance loads can be easily handled under "real" operating conditions, with no danger of premature activation of

the amplifier's protection shutoff circuitry.

High Dynamic Power

These three receivers are specially designed to deliver high dynamic power, an important requirement for accurate reproduction of today's digital audio sources. Dynamic power is a measure of just how much "peak' power an amplifier has-the ability to deliver massive power output for transient musical peaks. With today's wide dynamic range sources, particularly digital audio discs, transient peaks can require instantaneous power far beyond the minimum RMS output power capability of an amplifier, and unless the amplifier is specifically designed and constructed to provide this kind of power, these peaks will be clipped Yamaha receivers ensure that enough power is there, through the use of highcapacity electrolytic capacitors in the power supply stage, supported by high-quality wiring and circuitry throughout. High dynamic power is even available when driving a low-impedance load.



Auto Class A Power (R-9)

Yamaha's unique Auto Class A Power circuit provides the R-9 with the unrivalled reproduction purity of Class A amplification for those portions of the music signal that require average power output levels. Extensive research has shown that the vast majority of all recorded music sources require very little power output for most of the music signal, even at high listening levels. High output power is needed only for the musical peaks. The Auto Class A Power circuit takes advantage of this by providing pure Class A power for up to 5 watts of output power (into an 8 ohm load), and shifting automatically to Class AB operation only for the duration of brief musical peaks that require extra power. This results in the extreme accuracy and purity of Class A operation, plus the high power capacity and high efficiency of Class AB operation, an ideal combination of the best of both. The Auto Class A Power circuit is switchable with a front panel selector.

Zero Distortion Rule Amplification

Yamaha's original Zero Distortion Rule circuit effectively eliminates all distortion products arising in the amplifier stage itself as a result of transistor non-linearity, thermally induced distortion, and switching distortion in a class AB amplification circuit, for an output signal waveform identical to the input signal waveform. This is performed by a circuit which compares the shape of the input waveform to that of the output waveform, then defives a signal exactly matching that of the difference between the two and adds it back in at the input stage via a summing circuit, out of phase and in carefully controlled proportion to the original signal, effectively cancelling any derived distortion components in the signal. The circuit operates in real time, so that the output signal waveform always matches the input signal waveform, leaving the final output signal completely distortion free. The amount of distortion reduction achieved is equivalent to the theoretical application of infinite negative feedback, a practical impossibility which can never be achieved, only approximated with conventional applications of negative feedback. The Zero Distortion Rule circuit further enhances the performance of Auto Class A Power, eliminating all switching distortion in Class AB operation and all transistor non-linearity and thermal distortion during Class A operation. Back electromotive force from the speakers, another potential source of signal distortion, is also eliminated. The result is pure, natural music reproduction that no other amplification system can provide.

New Continuously Variable Loudness Control

Yamaha's continuously variable loudness control has long been a highly valued feature on amplifiers and preamps in any category. Unlike conventional loudness controls, which provide a fixed level of low and high frequency boost when engaged,

Actual Music Waveform Samples Showing Power Content



The ZDR distortion detector separates the distortion components from the output audio signal and adds these back into the input signal out of phase, thereby cancelling the distortion.

B: Normal application of

ZDR. Distortion waveform

A: No ZDR applied. Desired signal plus distortion waveform.



Loudness Control Characteristics



the continuously variable loudness control attentuates the midrange frequencies over a continuously varying level-dependent curve, for optimum tonal balance at any setting. All three receivers offer a newly designed version of this classic control feature which is effective over a wider range of attenuation, from 0 to-40 dB, making it useful at higher volume settings and over a much wider range. The response curve has also been redesigned to provide the most natural possible response at all listening levels. The versatility of this unique and useful control is unmatched by any conventional fixed-level compensation system.

New Computer Servo Lock Tuning System

Yamaha's New Computer Servo Lock Tuning system is a highly sophisticated twostage synthesizer tuning system governed by microprocessor control. It consists of an infinite resolution FM servo tuning circuit, automatically engaged for reception of signals with sufficiently high signal strength and signal-to-noise ratio, as determined by the internal microprocessor. When weak signals or those with poor signal-to-noise characteristics are detected, the internal microprocessor automatically engages a PLL tuning circuit which provides significantly higher resolution, tuning in fine increments of 0.01 MHz in FM, and 1 kHz in AM. This provides maximum tuning precision for reception of weak distant stations, or those plagued by interference. In this way, the New Computer Servo Lock Tuning System guarantees the highest tuning accuracy over the widest possible range of broadcast signal quality conditions.

ZDR

Distortion Detector

Rec Out Selector

The Yamaha Rec Out Selector is another extremely useful feature which greatly extends the source control capability of the receiver. It allows you to record one source, selected by the Rec Out Selector, while monitoring another, completely independent source selected by a front panel input selector. And the Rec Out Selector also allows you to copy tapes between the two tape inputs, in either direction, eliminating the need for complicated re-connections when dubbing tapes between two decks.

Digital Fine Tuning (R-8/R-9)

Extreme tuning precision, independent of the New Computer Servo Lock Tuning system, is provided on the R-8 and R-9 with digital fine tuning capability. This manual fine tuning control allows you to tune in increments of 0.01 MHz for FM, and in 1 kHz for AM reception. This is particularly helpful in obtaining maximum signal quality when tuning relatively weak stations interfered with by a stronger signal adjacent to it on the band. Once a station's fundamental broadcast frequency is tuned



in, the manual fine tuning control lets you vary the reception frequency point in 0.01 MHz steps (FM) away from the interference signal, in either an Up or Down direction, to eliminate or greatly minimize the influence of any nearby signal. Shifting the reception frequency by fine increments

ion (dB)

in this way allows you to obtain the best possible signal-to-noise characteristics when tuning under these difficult conditions. The tuning process is aided greatly by a 10-segment signal quality meter, which provides an accurate representation of the signal-to-noise ratio of a station received. The visual display tells you when the ideal

reception point has been reached when using the manual digital fine tuning control. Enhanced rejection of intermodulation distortion and beat interference, and improved AM reception quality are also made possible by this advanced tuning control system. The digital fine tuning reception frequency

point is also memorized when making station presets, so the exact same tuning conditions will be maintained every time the station is received.









Fine Tuning Use Example

The photo represents two adjacent broadcast signals. Interfering signal (1) at 98.1 MHz, 80 dBf, having 40 kHz deviation, and the desired signal (2) at 98.3 MHz, 40 dBf, also having 40 kHz deviation. Obviously, we want to receive the desired signal (2) with as little interference from the neighbouring strong signal (1) as possible. The Yamaha Fine Tuning system lets

us achieve the best possible reception, as



Selectivity Curves At Various "Fine-Tuned" Frequencies



The following photos show the signal waveforms at successive 10 kHz steps, tunable using the Yamaha Fine Tuning system.



shown below.

A) Normal tuning at 98.30 MHz (the frequency of the desired signal) results in ex-treme distortion caused by the strong interfering signal. The signal will be monaural and the signal quality meter will not light.



to 98.31 MHz with Fine Tuning does improve the signal. but it is still highly distorted and will be received in mono. The signal quality meter will not light.







At 98.40 MHz we have gone too far, reverting to a mono signal of significantly degraded quality. The first 2 segments of the signal quality meter will still light.



D) At 98.33 MHz we get an extremely high quality monaural signal with only 0.1% distortion. The first 2 segments of the signal quality meter will light.

Auto DX Tuning

When a weak signal is received, or if a noisy signal caused by interference is received, the tuner section should have high selectivity to reject outside interference and provide clear reception. When a strong station is received, the tuner should have low selectivity as this provides more accurate, distortion-free music reproduction and enhanced stereo separation. Conventional tuners have a constant selectivity value-a compromise which provides adequate, but hardly ideal reception under most conditions. The Yamaha Auto DX circuit incorporated in the R-9 and R-8 overcomes this drawback by setting IF amplifier selectivity to DX (high selectivity) or Local (low selectivity) depending on the quality of the received signal. The tuner is thus automatically optimized for both weak and strong stations, providing the best possible performance under all reception conditions.

10-Segment Signal Quality Meter

The newly designed signal quality display found on the R-8 and R-9 provides a genuinely meaningful display of not just signal strength, but signal quality when tuning in both the AM and FM modes. And the difference is significant. The sloped, 10-segment display provides an accurate visual reference of actual signal-to-noise characteristics of the station being received, lighting in succession as signal quality improves. When the highest point on the display illuminates, you know that the best possible ratio between signal strength and noise has been reached, for maximum reception quality. This is particularly important when using the digital fine tuning control, since it confirms the ideal reception frequency point with an easy to read graphic display.

16-Station Random Preset Tuning

With this computerized system, any combination of 16 stations, AM or FM, can be preset in any order for instant pushbutton tuning. For people living in areas where the airwaves are crowded with a wide variety of program listening possibilities, this gives you the quickest access to all your favorite stations, without having to tune back and forth across the dial until you find the program or station you'd like to hear. The front panel preset keys will each hold two stations, easily entered in a simple, two-step process, and memory backup keeps your station settings in memory for up to a whole week whenever the tuner is unplugged.

Independent Speaker A/B/C Selection (R-9)

Up to three different sets of speakers can be driven simultaneously, independently, or in any combination, permitting a wide range of paired or multiple speaker configurations for expanded listening pleasure. This allows you to drive two remotely located speaker pairs together, or to drive a dual speaker pair setup in a single listening environment, for more listening flexibility.

Wireless Remote Control (Standard with R-9, optional with R-8)

Infrared remote control allows the user to control all receiver functions from across the room for unsurpassed ease of operation. The receiver's volume knob moves in accordance with the signal from the controller, for visual confirmation of volume level setting from across the room.

Accessory Output Loop (R-8/R-9)

While graphic equalizers and other sound processing components are being added to many stereo systems, the circuit has to be rerouted through a tape deck loop with most receivers. This is not only troublesome to set up, but also wastes an output terminal. With the R-8 and R-9, a separate accessory output loop allows connection of such signal processing components without wasting a tape deck loop.

Large Digital Frequency Display

The frequency display on each new receiver is large and clear, providing visual confirmation of the station tuned in, even from across the room. This is especially useful when tuning with the remote control unit.

OTHER FEATURES

•Auto up/down tuning •Last station memory •MM/MC cartridge selector •Center defeat tone controls for bass, midrange, treble







MORE ENTERTAINMENT POSSIBILITIES – CONTROLLED FROM THE R-9 AND R-8

Video Input Selectors

The R-8 and R-9 allow you to integrate separate audio and video systems into a full-scale audio/visual home entertainment system, with high-fidelity reproduction of video sources in stereo. Rear panel input/ output terminals are provided for both the video and audio signals of two separate video sources, and one-way dubbing of both the video and audio signal is possible. Thus you can, for example, connect two video tape decks, or a video disc player to one input and a video tape deck to the other, for one-touch tape-to-tape or discto-tape dubbing. Audio inputs and outputs are provided in stereo for both video sources, for full compatibility with today's high-fidelity stereo video units. Monaural video tape decks may also be used.

Simple to Connect, Simple to Operate

Connecting a single video tape deck or video disc player is a simple and troublefree operation. The terminals are standard RCA pin plug terminals, similar to those used on all your audio components. All you need to do is connect the Video and Audio Out terminals of the video component to the R-9/R-8 rear panel Video 1 or 2 and Audio In terminals, make sure the Mono/Stereo selector on the receiver's rear panel is correctly set, and connect the R-9/R-8 Video Out terminal to the monitor's Video In. If your monitor has an RCA Video In pin plug, you can make this connection directly, but if you are using a standard home TV, you may need to purchase an adaptor. Once these connections are

made, all you need to do to operate the system is press the receiver's front panel Video input selector, press the Video 1 or Video 2 selector, turn the monitor on, and start playback. The audio signal from your video source can be controlled from the R-9/R-8 front panel.

Dubbing with Two Video Sources

If you connect two video components, you will be able to copy tapes unidirectionally from Video 1 to Video 2. Connect up the system in exactly the same way as if you were using a single deck, but connect the monitor to the Video Out terminal of the Video 2 source. To copy a program, just press the Video 1 and Video 2 selectors on the front panel, set the Video 1 tape deck to the Rec mode, and begin playback. Dubbing will then take place automatically-there will be no need to use the receiver's tone or volume controls. The R-9/R-8 is also able to accomodate the latest HiFi video tape decks. In this case, you need make a simple reconnection of the audio signal terminals of the video deck to one of the Tape Line In terminals.

Simulated Stereo Circuit

A simulated stereo circuit in the R-8 and R-9 dramatically improves the depth and imaging of a monaural audio signal from video sources, AM broadcasts, or TV broadcasts. This effect recreates the dramatic "live" sensation experienced in a theatre or auditorium right in your own home, greatly enhancing the impact of monaural sources. The simulated stereo effect is achieved with the use of a carefully designed comb filter with an optimally determined number of bands, band frequencies, and bandwidth configuration, resulting in the most natural response possible.

Dynamic Noise Canceller

The Dynamic Noise Canceller is an exclusive Yamaha noise reduction system that effectively increases the signal-to-noise ratio of any program source, particularly useful in combination with the simulated stereo circuit applied to monaural sources. Unlike conventional "dual process" noise reduction systems, no encoding or decoding takes place, so it works with any program source. The entire circuit is contained in a special Yamaha-developed integrated circuit, for extreme stability and reliability. A sliding low-pass filter is employed to automatically follow the upper limit of program frequency content and filter out any noise above its highest frequency, while any noise within the program source itself is eliminated by a psychoacoustic effect known as "masking". The result is exceptionally quiet, noise-free reproduction with all sources, particularly those likely to have a large amount of high-frequency noise, such as monaural video and television broadcast signals. When used in combination with the simulated stereo circuit for such sources, the result is dramatically noise-free, life-like sound. The Dynamic Noise Canceller circuit is also particularly effective with noisy cassette tapes and FM broadcasts.







R-7: MAXIMUM QUALITY IN A VERSATILE ALTERNATIVE

Low Impedance Drive Capability

The low impedance drive capability of the R-7 allows you to drive two sets of speakers simultaneously or use low impedance speaker systems without receiver shutoff of system damage. This means that an extremely wide range of speakers can be driven.

High Dynamic Power

High dynamic power gives the R-7 the capacity to deliver large volumes of power in response to transient peaks, and to reproduce the full dynamic range of today's high-quality music sources, in particular digital audio discs. The R-7's high-capacity electrolytic capacitors in the power supply stage and quality circuitry ensure that peaks are never clipped or distorted.



New Continuously Variable Loudness Control

This popular and proven feature has been redesigned with a new response curve more closely matched to human hearing characteristics for the most natural sound possible. It features an even wider range of attenuation than before, to -40 dB, making it effective over a very wide range of volume control.

Rec Out Selector

The R-7 also features a useful Rec Out Selector which greatly extends its source control capability. It allows you to record one source while monitoring another independent source, selected by a front panel input selector. The Rec Out Selector also allows you to copy tapes between the two tape inputs, in either direction, without the need for complex re-connections.

New Computer Servo Lock Tuning System

The R-7 is equipped with a new Computer Servo Lock Tuning system, consisting of an infinite resolution FM servo tuning circuit for normal tuning conditions, and a PLL circuit for reception of weaker stations. Microcomputer control selects the appropriate mode automatically. The high precision PLL tuning circuit provides extra stable reception of weak broadcast stations.

Auto DX Tuning

When a weak signal is received, or if a noisy signal caused by interference is received, the tuner section should have high selectivity to reject outside interference and provide clear reception. When a strong station is received, the tuner should have low selectivity as this provides more accurate, distortion-free music reproduction and enhanced stereo separation. Conventional tuners have a constant selectivity value-a compromise which provides adequate, but hardly ideal reception under most conditions. The Yamaha Auto DX circuit incorporated in the R-7 overcomes this drawback by setting IF amplifier selectivity to DX (high selectivity) or Local (low selectivity) depending on the guality of the received signal. The tuner is thus automatically optimized for both weak and strong stations, providing the best possible performance under all reception conditions.

10-Segment Signal Quality Meter

This new meter gives a signal quality display designed to reflect not just signal strength, but actual signal-to-noise characteristics of the received signal. The sloped, 10-segment display provides an extremely useful visual aid when tuning to achieve the best possible signal reception quality.

16-Station Random Preset Tuning

With this newly developed computerized system, any combination of 16 stations, AM or FM, can be preset in any order for instant pushbutton tuning to your favorite stations. What's more, the station status memory includes DX/Local/Auto DX and stereo/mono settings, along with the preset frequency, for optimum tuning convenience.

Independent Speaker A/B Selection

Two different sets of speakers can be driven simultaneously, independently, or in any combination, permitting a wide range of paired speaker configurations for expanded flexibility and listening pleasure.

Large Digital Frequency Display

The frequency display on each new receiver is large and clear, providing visual confirmation of the station tuned in, even from across the room. This is especially useful when tuning with the optional remote control unit.

Optional Wireless Remote Control

Infrared remote control allows the user to control all receiver functions from across the room for unsurpassed ease of operation. The receiver's volume knob moves in accordance with the signal from the controller, for visuāl confirmation of volume level setting from across the room. BS-7

Other Features

Auto up/down tuning •Last station memory •MC/MM cartridge selector
•Center defeat tone controls for bass and treble •Independent speaker A/B selectors
•Built-in subsonic filter

R-9/R-8/R-7 Natural Sound AM/FM Stereo Receivers

R-9/R-8/R-7 SPECIFICATIONS

R-9: Minimum RMS Output Power per Channel: 125 Watts (8 ohms) from 20 to 20,000 Hz at no more than 0.015% Total Harmonic Distortion R-8: Minimum RMS Output Power per Channel: 85 Watts (8 ohms) from 20 to 20,000 Hz at no more than 0.015% Total Harmonic Distortion R-7: Minimum RMS Output Power per Channel: 65 Watts (8 ohms) from 20 to 20,000 Hz at no more than 0.015% Total Harmonic Distortion

	R-9	R-8	R-7
AUDIO SECTION			
Dynamic Power per Channel			
1 kHz, 8/4/2 ohms	180/280/360 W	130/190/200 W	101/144/170 W
Dynamic Headroom (8 ohms)	1.58 dB	1.84 dB	1.8 dB
Power Bandwidth			
Half Rated Power, 8 ohms	10 to 50,000 Hz	10 to 50,000 Hz	10 to 50,000 Hz
	(0.1% THD)	(0.08% THD)	(0.1% THD)
Damping Factor (8 ohms, 1 kHz)	60	~	50
Input Sensitivity/Impedance			
Phono MC	160 µV/220 ohms	(÷
Phono MM	2.5 mV/47 k-ohms	←	+
CD/Video/Tape	150 mV/47 k-ohms	←	+
Receive (Accessory)	150 mV/47 k-ohms	+	-
Input Sensitivity (New IHF)	9.9		1 1
Phono MC	17 μV	÷	20 µV
Phono MM	0.27 mV	←	0.31 mV
CD/Video/Tape	16.3 mV	←	18.6 mV
Maximum Input Level			
Phono MC	8 mV	+	+
Phono MM	110 mV	+	a ← - 1
Output Level/Impedance	N. M. SHARANINI OR		
Rec Out	150 mV/470 ohms	+	÷
Headphone Jack Rated Output			
Impedance			
0.015% THD	0.91 V/270 ohms	0.75 V/270 ohms	0.8 V/100 ohms
Frequency Response		June mere omnå	Sie antee onnie
20 to 20 000 Hz CD/Video/Tape	+0/=0.3 dB	-	+05/-05 dB
BIAA Equalization Deviation	+0/-0.5 05		+ 0.0/ - 0.0 0.0
30 to 20 000 Hz Phone MC PIAA	105 dB	4	2
20 to 20,000 Hz, Phone MM PIAA	±0.3 0B		
10 to 100 000 Hz, Phone MM BIAA	±0.3 0B	-	-
Total Harmonia Distartian	±0.5 0B		-
(20 to 20,000 Hz)	0.0050/		
Phono MC to Rec Out, 3 V	0.005%	+	+
Phono Wivi to Rec Out, 3 V	0.003%		-
CD/Tape to Sp Out, Hair Hated Power	0.015% (8 onms)	÷	← (CD/Video/Tape,
	0.0001 (0.1)		8 onms)
Video to Sp Out, Half Rated Power	0.02% (8 onms)		-
Intermodulation Distortion			
CD/Video/Tape, Half Hated Power	0.01% (8 onms)	+	+
Signal-to-Noise Hatio (IHF-A-Network)	- 60%-00		
Phono MC (500 µV, Input Shorted)	75 dB	+	+
Phono MM (5 mV, Input Shorted)	92 dB	-	<i>←</i>
CD/Tape (Input Shorted)	103 dB	+	←(CD/Video/Tape)
Video (Input Shorted)	91 dB	+	
Signal-to-Noise Ratio (New IHF)			
Phono MC	74.5 dB	75 dB	75 dB
Phono MM	75 dB	75.5 dB	76 dB
CD/Tape	80 dB	81 dB	82 dB
Residual Noise (IHF-A-Network)	120 µV	÷	140 μV
Tone Control Characteristics			
Bass boost/cut	±10 dB (50 Hz)	←	
turnover frequency	350 Hz	+	÷ .
Treble boost/cut	±10 dB (20 kHz)	÷	+
turnover frequency	3.5 kHz	+	+
Mid control range	±12 dB (1 kHz)	~	_
center frequency	1 kHz	+	
Filter Characteristics	0.055 NB		
Low (Subsonic)	10 Hz (-12 dB/oct)	+	+
Continuous Loudness Control			
(Level-related-equalization)			
Attenuation	- 40 dB (1 kHz)	←	÷
, monoulon		n	

	R-9	R-8	R-7
FM SECTION			
Tuning Bange	87.6 to 108.0 MHz	←	+
50 dB Quieting Sensitivity (IHF)			
75 ohms, mono	1.5 µV (14.8 dBf)	+	1.55 uV (15.1 dBf)
stereo	20 #V (37.3 dBf)	+	21 µV (37.7 dBf)
Usable Sensitivity (IHE mono)			
30 dB Quieting, 75 ohms	0.75 #V (8.8 dBt)	+	0.8 "V (9.3 dBf)
Image Besponse Batio	40 dB	H	←
IF Besponse Batio	90 dB	+	+
Spurious Response Ratio	70 dB	+	
AM Suppression Ratio	70 dB		
Aivi Suppression Hallo	55 UB		-
	1.0.10/0.5.10		
Local/DX	1.2 dB/2.5 dB	÷	÷-
Alternate Channel Selectivity	05.10		5. 108
UX	85 dB	-	÷
Signal-to-Noise Hatio			
mono/stereo	85 dB/81 dB	+	+
Harmonic Distortion (mono)			
Local, 100 Hz	0.05%	←	+
1 kHz	0.05%	←	+
6 kHz	0.1%	+	←
Harmonic Distortion (stereo)			
Local, 100 Hz	0.07%	÷	÷
1 kHz	0.07%	←	<i>←</i>
6 kHz	0.15%	÷	+
Stereo Separation		2	
Local, 50 Hz	45 dB	+	+
1 kHz	50 dB	+	+
10 kHz	45 dB	÷	÷-
Frequency Response			
30 to 13 000 Hz	+0.5 dB	+	+
AM SECTION	200 00		
Tuning Bange	510 to 1 620 Hz	-	-
Leable Sensitivity	250 "V/m	* *	-
Selectivity	230 µViiii	2	
Selectivity	24 UB		
Signal-to-Noise Ratio	50 UB	-	-
image Response Halio	40 08		-
Spurious Response Hatio	50 dB	÷ .	.
Harmonic Distortion (400 Hz)	0.3%	+	+
AUDIO SECTION		*	
Output Level/Impedance (Fixed)			
FM 100% Mod, 1 kHz	500 mV/2.8 k-ohms	+	
AM 30% Mod, 400 Hz	150 mV/2.8 k-ohms	+	<u>+</u>
GENERAL	14		
Dimensions (W \times H \times D)	435×151×423 mm	- ²¹⁺	435 × 126 × 288.5 mm
	(17-1/2"×6"×16-5/8")	+	(17-1/2''×5''×11-3/8'')
Weight	12 kg (26 lbs. 6 oz.)	11 kg (24 lbs. 3 oz.)	6.6 kg (14 lbs. 8 oz.)
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Specifications subject to change without notice.

For details please contact:

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