AUDIO COMPONENTS
Kenwood for the '90s...The Perfect Balance
THE PERFECT BALANCE

In the past few decades Kenwood has become known for creating high quality audio components that sound good, are full featured and long lasting. And most importantly Kenwood has been known for offering the best value in the audio industry.

We offer state-of-the-art technology, combined with the latest user convenience features. In the coming decade that long standing tradition will be even more evident.

And we're not afraid to challenge some well entrenched technological achievements where good sound is at stake.

When it comes to CD player fidelity, we go to the heart of the matter. Kenwood has developed an entire line of test equipment just to aid in the development of our CD technology. One of our discoveries was that while everyone was worried about the number of bits in a CD player, they were taking for granted the factor of time.

Our test equipment shows that the digital to audio conversion process alters the time of the digital signal. We have since developed D.P.A.C. (Digital Pulse Axis Control) to correct for this oversight that is inherent in all other CD players that don't address the time factor. And D.P.A.C is only the beginning. Come along as we take you ever closer to Hi-Fi perfection.
L-1000D Compact Disc Player
The impeccable sound of the L-1000D was achieved by taking a radical approach to virtually every aspect of its design and construction. Signal paths and amplification stages are all fully balanced, yet unlike pro studio equipment they use no bandwidth limiting input/output transformers. Vibration damping/isolating construction and optical digital signal transmission preserve signal quality. Combining only the advantages of both ladder-type and noise shaping uni-bit type converters, the dual staggered-balanced integral DAC construction used in the L-1000D satisfies the demand for monotonicity, as well as both integral and differential linearity. The jitter preventing new DPAC system extends time-base correction beyond the DAC itself, into the analog stage. The resulting resolution of tiny changes in signal level appears as a captivating naturalness of tonal nuance and dynamics.

L-1000C Control Amplifier
Like all components in the L-series, the L-1000C features full balanced construction—the positive and negative halfwaves follow separate signal paths, complemented by an independent ground plane. The high internal noise rejection and distortion cancellation achieved by this construction is also preserved between components by equipping the L-1000C and other L-series units with Cannon connectors. Phono inputs are converted to balanced signals internally, again without transformer intervention. Both MC and MM are accepted.

The “shower light” display and remote controlled motorized volume knob hint at the perfectionist approach to system control realized by the L-1000C. The volume control is in fact a fully balanced amplification gain control circuit, designed to preserve signal-to-noise ratio even at high attenuation.

L-1000M Stereo Power Amplifier
While pro equipment uses balanced transmission between components, the Kenwood L-series adopts an innovative internally balanced configuration that prevents noise amplification by completely canceling common mode noise. Though other designs may claim such an achievement in theory, Kenwood’s balanced transmission system and balanced amplification circuits achieve it in reality—because the success of Kenwood’s implementation does not rely upon perfectly matching semiconductors, an impossibility in the real world of manufacturing. Most harmonic distortion is also eliminated by this advanced circuit approach.

The high linearity and efficiency of the L-1000M is supported by its massive power supply with a separate 270VA power transformer for each channel as well as four 47000 microfarad capacitors. Cannon outputs and terminals for banana plug connection are provided.

L-1000T FM Quartz Synthesizer Tuner
Kenwood FM tuners have long held a special place in the hearts of audiophiles. The L-1000T is about to take its place as the latest in this legendary lineage. "Effortlessly accurate" is one way to describe the L-1000T’s performance. Exclusive Active Reception Control Circuitry optimizes signal quality in the IF stage, to bring out the full benefits of the DCC (Distortion Correcting Circuit) which cancels IF filter distortion, the DLLD (Direct Linear Loop Detector) detector, and DPD (Direct Linear Decoder) with time-base correction of the carrier using quartz dual PLL MPX circuitry.
L-1000D Compact Disc Player

L-1000C Control Amplifier

L-1000M Stereo Power Amplifier

L-1000T Quartz PLL Synthesizer Tuner
Bringing You the Full Potential of Digital Sound—With Higher Linearity and Time-Base Stability

CD PLAYER TECHNOLOGY

These days, we hear a lot about the advanced digital circuitry different manufacturers use in their CD players. In particular, this talk often centers on the “number of bits” of the digital-to-analog converter, or DAC. Sixteen-bit, 18-bit, 20-bit, even 1-bit DACs are battling for technological superiority in the minds of today’s consumers.

Since the DAC is critical to the overall performance of the CD player, we offer twin 20-bit D/A converters in our upper end players. But, the number of bits in a D/A converter is not the only thing that gives a CD player its distinctive sound. We’ve learned through extensive experimentation with our own line of digital test equipment, that concentrating on the digital-to-analog conversion phase alone will not result in truly accurate sound from a CD.

Increasing the number of DAC bits is intended to increase linearity and reduce quantization error. In other words, to improve the accuracy of the amplitude axis. But sound is not static. It follows the time axis as well. In fact, this “second dimension”, “time”, is even more crucial to the sound quality of a CD player than the amplitude.

Jitter and Unnatural Sound

In a conventional CD player, the time axis can get “out of alignment” before the digital signal even reaches the DAC. This phenomenon is known as “jitter” and it arises due to instabilities in the timing signal pulses that keep the digital data moving at a steady pace. For example, though the digital signal might be encoded with a 16-bit signal not 18 or 20. The goal is to do the original 16 as accurately as possible.

Neither oversampling nor the use of multiple DACs will increase the number of bits in the original. Anyone claiming otherwise is out of touch with reality. As a manufacturer of digital test instruments as well as audio equipment, we should know.

The Kenwood Full-Bit D/A conversion system is designed to improve linearity—to make sure that the analog output signal corresponds precisely to the original music signal. Non-linear DAC response shows up as quite audible distortion. And since it is totally unrelated to the

DPAC Kills Jitter In the Digital Domain.

Extensive research has revealed that jitter is an inevitable consequence of the oversampling digital filtering process. Kenwood’s DPAC—Digital Pulse Axis Control—eliminates jitter by re-aligning the digital signal with the master clock frequency. To do this it employs a second quartz oscillator to produce a super-accurate reference clock frequency. This is used to “reconvert” the output from the oversampling digital filter into a digital signal which is accurately time-aligned. The benefits of digital filtering remain and the digital bit stream fed into the DAC is completely jitter-free.

Kenwood New DPAC—(DPACII)

DPAC brings dramatic improvements in the time axis accuracy of the digital signal. But this is not the end of the story. In fact, the DAC itself is so precise that it introduces a certain amount of jitter into the analog output signal as it operates.

This jitter is not as extreme as it would be without DPAC processing of the pre-conversion digital, but it is still there. Caused when the analog output signal induces fluctuations in the standard electrical pulse-train of the DAC, this type of time axis misalignment shows up as a slight “fuzziness” in oscilloscope traces of the analog signal.

New D.P.A.C. BLOCK DIAGRAM

Kenwood’s new DPAC actually corrects this remaining jitter in the analog domain. It uses a sample-and-hold circuit to “realign” the analog signal containing jitter with a jitter-free master clock. This restores the time-axis integrity of the music signal, as can be seen in the oscilloscope trace of the new DPAC output waveform.

New D.P.A.C.

Linear Full-Bit Twin D/A Conversion System

Some advertising might try to convince you otherwise, but extra bits in the digital filter or converter can do nothing to actually increase signal resolution. Instead, the technical reason for using these extra bits is improved linearity.

The non-technical reason is that a converter designed to convert 16 or 20 bits will have an easier time converting just 16. And remember, all CD’s are encoded with a 16 bit signal not 18 or 20. The goal is to do the original 16 as accurately as possible.

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Zero cross (digital crossover) distortion, which most noticeably affects small signals, is a thing of the past. There is also far less distortion at high amplitude than with competing systems which temporarily boost and then attenuate portions of the converted signal. All of the low level and high level information makes it through the conversion process. So all of the music the digital data represents is clearly audible. Kenwood's Full-Bit system delivers a wider effective dynamic range and better linearity. So linear, in fact, that we were able to dispense with the usual deglitcher system.

Eighteen Plus Two Equals Twenty

If the 20-bit DACs used in many Kenwood CD players are so effective in improving linearity and minimizing quantization error, why didn't we just build a 40- or 89-bit DAC while we were at it? In reality, there are practical limits to the number of DAC bits. With today's monolithic IC technology 18 bits is the maximum on a single chip.

It is possible to build a 20-bit DAC using discrete devices. But such units are highly susceptible to changes in temperature and require complicated grounding arrangements. This makes them too unstable to be practical.

Most of the "20-bit DACs" now in use in commercially available CD players actually consist of a monolithic IC 18-bit DAC with two discrete devices added for a total of 20 bits. But such arrangements suffer from the same defects as DACs comprising all discrete devices (though to a lesser degree) and are therefore unable to fully realize their theoretical potential.

Kenwood's solution to the question of how to build a better 20-bit DAC is as elegant as it is effective. A monolithic IC 18-bit DAC is coupled with a Kenwood developed hybrid IC 2-bit DAC. The resulting 20-bit DAC is as immune to temperature induced fluctuations in performance as monolithic 18-bit units. Grounding is also much simpler than in designs incorporating discrete devices.

20-Bit 8-Times Oversampling Digital Filter

Oversampling, a type of digital filtering, is intended to minimize the need for analog filtering of the music signal. Without digital filtering, the output signal from the DAC must be subjected to an analog filter with a steep cutoff slope in order to remove quantization noise from the digital-to-analog conversion process. But "brick wall" filters of this type distort the phase of the signal, adversely affecting the fidelity of the sound you hear. This phase shifting is particularly noticeable in the higher frequencies, where it shows up as blurred stereo imaging.

20-bit 8ths Linear Full-Bit D/A Converter System

New Multi-Insulation System

CD tracking accuracy will deteriorate if sonic energy from your speakers vibrate the CD player chassis. These sonic vibrations can adversely affect the performance of the CD player's internal and external mechanical systems which can cause degradation of the tracking and of the DAC conversion process. Plus the stability of the master clock's quartz oscillator could be affected which can lead to jitter which can seriously undermine the sound quality of the output signal.

The new multi-insulation system featured in...
many of this year’s Kenwood CD players uses a 5 point strategy to kill internally and externally generated vibrations. A 2-layer chassis, special insulators for the disc drive and printed circuit boards, hybrid insulators separating the pickup assembly from the power supply and feet incorporating elastic resin dampers provide comprehensive protection. So you can enjoy your CDs as loud as you like while maintaining optimum fidelity.

Optimum Servo Control Type III

Though vibrations can be minimized, the tracking servo still plays a crucial role in keeping the laser pickup over the proper disc track. As mentioned above, conventional servos can actually interfere with accurate signal retrieval if the corrective voltage they apply is too strong. To minimize this danger, the Kenwood Optimum Servo Control Type III system temporarily reduces servo gain if the pickup passes over a defective area. You get highly precise tracking without distortion of the digital signal.

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Surround Sound

What makes watching a movie in a theater so exciting? Why is it so difficult to recreate that feeling of immediacy on the small screen or even a big screen at home? In reality, what you see is only a small part of the picture. What you hear is actually more important to the total effect.

When you are in a movie theater you are watching a large 40-60 foot screen, maybe larger. When the movie soundtracks are mixed, that screen size is factored into the mix. When things are happening on the left side of the theater the sound comes from the left, when things are happening on the right the sound comes from the right. And when events occur in the center of the screen the sound comes from the center. There is even a provision for extra speakers behind and to the sides of the audience for ambient sound—the three dimensional direction of sound. This is the effect you hear at all Dolby® Stereo movies.

There are several terms used to talk about the surround sound in a movie. The first was just mentioned...Dolby Stereo. This is the terminology used by the movie studios and Dolby Labs to tell whether or not the movie was encoded with a surround sound track from Dolby Labs. If the movie says Dolby Stereo you can be assured there is a surround soundtrack. Some pre-recorded videotapes will say Dolby System on the linear tracks. This means the audio tracks of the tape were recorded using Dolby Noise Reduction and has nothing to do with the surround soundtrack. The movie may have surround sound and may not.

Dolby Surround is a term used in consumer electronics to designate equipment that has a decoder for Dolby Surround Sound built-in. The standard Dolby Surround Sound Decoder is used in conjunction with a pair of rear speakers to create ambiance in the room.

These decoders are "passive decoders". They add depth and enhance movie watching. This type of decoder is available in the KR-V6020, KR-V7020, KR-V8020 and SS-79. They use a simple decoding circuit and Dolby Noise Reduction to create a rear surround channel.

The last type of surround sound you will probably see is Dolby Pro-Logic. This expression is used to describe another type of consumer surround decoding process. This process takes Dolby Surround a few steps further. First, a steering logic (hence the name Pro-Logic) circuit is used to determine the position of each sound. That sound is then either sent to the rear speakers or to the front. The difference between Surround and Pro-Logic is that the passive Surround yields about 40 dB difference between the front and rear channels. Pro-Logic has the capacity to yield about 25 dB of channel separation. Next with Pro-Logic there are three different listening modes.

1.) Phantom. This is used with two main left and right speakers and rear surround speakers.

2.) Wide. The same configuration as with Phantom with the addition of a center channel speaker.

3.) Normal. This mode is used with two main speakers, rear speakers, a center speaker with good bass reproduction or a sub-woofer.

The Phantom mode is the easiest to use because it requires no more setup than the standard Dolby Surround. Wide is where the effect of Dolby Pro-Logic becomes impressive. The addition of a center speaker yields outstanding sound. There is even a provision for extra speakers behind and to the sides of the audience for ambient sound—the three dimensional direction of sound. This is the effect you hear at all Dolby® Stereo movies.

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Normal is the system suggested by Dolby Labs for optimum sound. It requires the most
equipment but yields the best sound. The configuration is the same as for Wide with the addition of a sub-woofer or bass speaker to the center channel or a higher quality center channel speaker that can accurately reproduce bass tones. The normal mode is where you not only hear the movie but also feel the action. The intensity and effect is dramatically increased and is well worth the extra work to setup. Once again remember that you can start out small and build up. You are not required to make the entire investment all at once. A Dolby Pro-Logic Decoder is available in the KR-V9020 and the KA-V6000. The KA-V6000 also has a separate pre-amp output for a future sub-woofer.

Input Balance Auto-Control

The enhanced realism of Dolby Pro-Logic ambience retrieval can only be optimized if the balance between the left and right channel is correct. If there is any variation, decoding errors can appear and the superior channel separation of Dolby Pro-Logic is not maximized.

In practice, this meant that owners of early Dolby Pro-Logic decoders had to laboriously calibrate the signal balance for each and every videotape or disc they played. Most didn’t bother and therefore lost out on much of the effectiveness of the system.

Kenwood’s input balance auto-control takes the drudgery out of obtaining optimum sound by eliminating sound-level errors automatically. Therefore, decoding always takes place under optimal conditions. Thanks to input balance auto-control, the center channel information comes out properly centered and rear channel separation is maximized.

S-VHS

S-VHS Connection Facilities

The video signal in a conventional color TV has a very narrow bandwidth. As a result, the color (or chrominance) portion of the signal must overlap with the brightness (or luminance) portion. Unfortunately, color information sometimes gets mistaken for brightness and vice versa. This leads to visible problems on the TV screen. One with which everyone is familiar is the false “cross color” (or moire) patterns that appear in the TV picture when someone wears clothing with a herringbone or narrow pinstripe pattern.

The only way to completely eliminate this type of interference would be to completely separate the chrominance and luminance banks. This is exactly what the system called Super VHS or “S-VHS” does. S-VHS also shifts the luminance band from 4.4 MHz up to 70 MHz for dramatically better resolution.

Kenwood audio-video amplifiers come standard with S-VHS connectors, so you can take full advantage of this new quality standard in video enjoyment. The KA-V6000, for example, features S-VHS input and output connectors, for connecting an S-VHS VCR or camcorder and monitor. So an S-VHS video source can become part of your total entertainment system, contributing detailed picture quality and dynamic sound.

Balanced Deep Bass Power

In a conventional speaker system, the woofer is mounted together with the midrange and tweeter in a single cabinet. Unfortunately, this approach is far from ideal. For starters, bass energy from the low-range unit can muddy the sound in the midrange and treble frequencies. Also, mounting all the drivers in one enclosure increases the size of the cabinet. This not only makes it difficult to fit into a typical room. It also invites edge diffraction and boundary reflection effects which prevent accurate stereo imaging and destroy soundstage realism.

The Kenwood solution marks a significant break from traditional loudspeaker design. We call it the Super Woofer System. It gives you better sound quality in a configuration that fits more naturally into your room interior. And it prevents the woofer from interfering with the optimal performance of the midrange and tweeter by removing it to a completely separate enclosure: the Super Woofer. Two compact satellite speakers complete the arrangement.

The Super Woofer, which can be placed away out of sight, employs an innovative design to produce powerful, tight low-bass response. Dual low-range drivers radiate into a bass emphasis chamber which is specially dimensioned to favor the desired low frequency range. The emphasized sound then travels to a neighboring treble attenuation chamber via a tuned port which also receives sound waves radiated from the rear of the woofer cones. The purpose of this second chamber is to eliminate unwanted higher frequency signal components that are better handled by specialized drivers in the companion satellite speaker systems.

Inside View of LS-W900

Dual Tuned Port Acoustic Bass Resonator

The treble attenuation enclosure can be thought of as an acoustic filter. It allows the low bass frequencies to remain, while it attenuates elements that could mask and muddy the output of the midrange and treble drivers. In this way low range distortion is minimized. But more importantly, narrowing the Super Woofer output to the optimal frequency band enhances the performance of the system as a whole.

To deal with the immense sound pressure levels which can build up inside the Super Woofer cabinet, the driver units employ special diaphragm materials and magnetic circuit construction. Thick non-pressed cones for the woofer diaphragms combine lightness and high rigidity with enough internal loss to suppress radiation of spurious harmonics. In addition, linear response extends throughout the very low frequency range thanks to precision engineered magnetic circuit and suspension construction.
Kenwood receivers offer the most useful features and the highest performance of any brand of receivers on the market. Someone may have a few extra bells and whistles but they can’t match Kenwood’s outstanding sound performance and these “performance oriented” receivers with little or no useless features can’t top our overall value.

Voltage Interface Gate Amplifier Circuit
Kenwood has developed amplifier circuitry that not only stabilizes the amplifier and allows it to drive lower impedance speakers, but also just makes it sound better.

The Voltage Interface Gate (VIG) works on the voltage amplifier in the unit (there are two, voltage and amperage) to be sure that the voltage stage is always stable. During times of low impedance drive or as the amplifier is being asked to put out its maximum amount of wattage the power supply can generate non-perfect current. The VIG circuit compensates and only allows pure, perfect, clean current through stable music performance.

Stabilized

Power supply

Voltage Interface Gate

Absorbs ripple, etc.

Signal

IR Input

Stabilized
capacitance

Input

Fixed

Varies as a function of output signal

Shunt

Output

Auto Function
One of the things that people are always telling us is that our remote controls are so complicated and have too many buttons. We of course remind them that the units are very full featured and all of those keys are needed to control all of the functions. But at the same time we have developed a system which makes operating extremely easy. The system is called Auto Function. It is completely automatic. When using Kenwood system remote compatible components all the confusing component switching is done for you, automatically.

For example, you are listening to a tape and you want to switch to a CD. On a conventional system you would press STOP on the cassette deck, press CD on the receiver or amplifier and then PLAY on the CD player. With Auto Function all you do is press CD on the remote and the system will take care of the reset. The tape deck will stop and the CD player will begin to play. Nothing could be easier. If you push PLAY on the remote for the CD player the same thing will happen.

This means that the only buttons you really need on the remote are the few Component ID buttons. If you happen to lose your remote, Auto Function will also work on the front panel of the components.

160-Function Programmable Remote Control
Kenwood Audio/Video Receivers are designed to coordinate all your audio and video components into a unified system. To make that goal a reality the KR-V9020 and KR-V8020 come with a learning remote control packed right in the box (with batteries) This remarkable remote unit puts you in complete command of the components you’re likely to connect to it.

Naturally, its programmed to control the KR-V9020 or KR-V8020 and a host of other popular Kenwood components. But this amazing remote doesn’t stop there. Its operation can be customized to cover virtually any other remote controllable component—from any manufacturer—that you may own now or purchase in the future.

All you do is put the remote head to head with another remote. It can actually "learn" the infrared light codes and then reproduce them later. Once you’ve transferred their major functions to the remote you can put the old units away in a drawer. Say goodbye to coffee table clutter.

This universal remote can learn up to 160 remote functions and comes pre-programmed with over 80 functions. The learning remote’s three modes (Audio/Video/Aux) enable each button to be utilized a minimum of three times. This three level operation is definitely better than a remote with around 240 buttons and is easy since many pieces of equipment use the same basic commands like PLAY, PAUSE, FF, RWD, 1.2,3,4,5 and a host of others. On the top of the remote are the keys for a cassette deck. The A/B switch allows the operation of the two wells of a double cassette deck in the Audio Mode. In the Video mode the A/B switch will control two different VCR’s and in AUX maybe a DAT Recorder and a third VCR. That’s a total of 6 cassette deck type functions from one set of keys. Ultimate flexibility is the only way to describe this remote.

Voltage Interface Gate Amplifier Circuit Diagram

Three modes (Audio/Video/Aux) allow complete control of virtually any audio, video, or other electronic device that uses wireless infrared commands. All the Aux position, all keys on the RC-100 can learn commands directly from other remote control units. Just place both remote control units head to head and press the keys on both units. It's that simple.

Dolby, Theater, and Hall Surround Modes
Many Kenwood Audio Video Receivers are equipped with Dolby Surround Sound Decoders and one with a Dolby Pro-Logic Decoder. A detailed explanation of the differences are in the beginning of this brochure.

KR-V9020 Inner Control Panel

Kenwood Audio/Video Receivers offer up near it’s maximum output potential. The midrange and high frequencies tend to sound slightly harsh, This is the voltage section not getting pure signal to the voltage amplifier. This delivers additional stability and better sound since all of the impurities being generated by the power supply are suppressed. This can be heard as you crank a standard receiver or amplifier up near its maximum output potential. The midrange and high frequencies tend to sound slightly harsh.

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KR-V9020 Inner Control Panel

*Supersedes all Dolby Laboratories Licensing Code
S-VHS Input/Output Connectors for Maximum Signal Purity

S-VHS is an advanced videotaping system that separates the luminance and chrominance components which overlap in a conventional video signal. It dramatically reduces picture distortion such as "cross-color" and "dot-crawl" effects and raises horizontal resolution to over 400 lines. The KR-V9020 features special input and output jacks (S-connectors) for this special signal format and discrete signal paths for each within the receiver. This assures that S-VHS or other Y/C separate format components (such as EO-beta) used with this connector retain their maximum potential.

CD Direct Path Connection

Another feature designed to ensure the utmost in signal purity is the CD direct inputs. Excessive switches or attenuators in the signal path can introduce noise or distortion into the music signal. CD direct lets you completely bypass the tone control and other circuits which are not usually needed for compact disc reproduction. This assures that the music signal from the CD player stays as pure and unblemished as possible.

There's ample provision for all of your other components—both present and future. A wealth of additional inputs and dubbing facilities handle virtually any conceivable configuration of digital audio, video and conventional audio equipment.

System Preset Memory Banks

Audio-video system operation can get pretty complicated as the number of entertainment sources and ways of using them proliferate. System Preset provides a practical solution. Its two memory banks (KR-V9020 and KR-V9020) each capable of storing a whole sequence of settings for instant recall.

Let's say you want to turn on the surround sound effect, add a particular equalization curve and adjust the front and rear volume balance when you watch videos. Once you've stored the necessary setting in one of the memory banks, the touch of a single button recalls all this information instantly.

Two system preset memory keys let you instantly switch between two distinct entertainment environments (including the current non-memorized settings). System Preset covers the following settings: Rear Volume, Input Source, Surround On/Off, Tuner Preset Channel, EQ Preset, EQ On/Off, EQ REC, and Balance. It's a convenient way to control your audiowide entertainment system.

Multi-Mode Dot Matrix Display and On-Screen Display

The dot matrix displays featured on many Kenwood receivers use patterns of tiny dots to play indications which are more detailed and easier to read than with conventional displays and also includes equalizer settings and surround mode recenter level.

If the KR-V9020 is connected to a TV monitor, even more detailed system information is displayed on the TV screen. The useful data shown includes the currently selected listening source, the viewing source, as well as functions such as video CD correct, audio injection and surround mode settings. After you operate a control on the remote or front panel, the relevant information appears on the TV screen for several seconds.

Familiar Rotary Knob Volume Control

All Kenwood receivers give you the convenience of the familiar rotary volume knob (not annoying up/down push-buttons). The remote controlled receivers (KR-A5020, KR-V6020, KR-V7020, KR-V8020, KR-V9020) employ motorized volume knobs. When you use the remote to adjust the volume, the knob on the front panel rotates while an indicator flashes showing you it is operating. You can also turn the knob by hand without damaging the motorized mechanism.

Video "Through" Dubbing

This is a convenient feature for editing videos or making video disc-to-tape transfers. Video "through" dubbing allows you to dub from one video source to another while watching or listening to any other source. Now you can make copies of all those home movies for the grandparents without having to actually sit through them.

7-Band Graphic Equalizer with 10-EQ Memory Presets

We all have our own personal preferences about how we want music to sound. No particular response curve will satisfy every listener. The listening room and the program material also make a difference. Boosting the low and high frequencies might be right for rock, but classical music might require careful midrange adjustment.

Using the built-in 7-band graphic equalizer, you are completely free to tailor the frequency spectrum to create the tonal balance you like best. And since different types of music demand slightly different treatment, there's a 10-preset memory capability to let you store and recall your equalization curves at the touch of a button. 5 of these presets are configured in the factory and 5 are available for your use.

SNPS—Station Name Preset System

It's much more natural to refer to FM and AM stations by their call letters than by their broadcast frequencies. The Station Name Preset System (SNPS) makes it easier to keep...
track of what you’re listening to by allowing you to store those familiar station names along with the frequency. Then, whenever you tune in a broadcast the call letters appear right on the display. SNPS can store up to 20 AM or FM stations with their call signs for instant, one-touch recall.

**SNDC—Station Name Direct Call (KR-V7020)**

SNDC takes SNPS one step further: When you wish to recall your favorite station you can simply key in the call letters on the remote control and the station is instantly on. No more trying to remember which preset you put your favorite on, just dial in the station call letters or any other 4-letter word (be careful) you wish to identify with the station and away you go.

**Spectrum Analyzer Display (KR-V9020)**

The display of the 7-band equalizer also doubles as a spectrum analyzer. Press a switch and it shows you the actual music energy within each frequency band. Used in conjunction with the equalizer, this analyzer gives you the information you need to equalize with greater precision and dependability.

### 10-Key Direct Access Tuning

Weak or far away stations may be completely skipped over by automatic tuning. But if you really want a particular broadcast you may not care about a bit of noise or static. Direct access tuning lets you zero in on any given station with pinpoint accuracy. All you need to do is use the 10-key pad to punch in the actual broadcast frequency.
Connection and Switching for a Multitude of Components.

The KA-V6000 has connections for 12 different components with switching and dubbing available between most. This is a possible system configuration for the KA-V6000. AUDIO-Turntable, CD Player, Tuner, Cassette Deck, Digital Audio Tape Deck with one input left for future usage. VIDEO-S-VHS VCR, VHS VCR, Beta VCR, Laser Video Disc, Direct Broadcast Satellite System and the front input ready for your camcorder. This is only one possibility. You may not be into video but have a multitude of audio sources. Just think of being able to connect 5 tape decks to one unit. Plus 7 other audio sources and have control of the dubbing between the components.

The potential of the KA-V6000 will probably not be realized for years, but won’t it be nice to not need to keep buying new equipment every time a new technology comes along.

KA-V6000 System Connections

S-VHS Capability

S-VHS is the Super VHS video system that uses a new signal format to achieve higher resolution and improved color. To make this possible, S-VHS separates the color portion of the video signal from the black & white portion which carries the picture detail. By preventing interference between the two parts of the signal, S-VHS avoids the kinds of distortion that you see in ordinary video playback. The difference is particularly apparent when you play a video recorded by an S-VHS camcorder. Since the KA-V6000 is equipped with S-VHS input and output connectors, it greatly simplifies connection of an S-VHS video source to a TV monitor that accepts S-VHS signals. This allows you to select video picture and sound simultaneously for extra convenience.

Dolby Pro-Logic, Theater and Hall Surround Modes

To give you the same excitement in your home you’ll find in a movie theater, the KA-V6000 features a Dolby Pro-Logic decoder. Detailed information on Dolby Pro-Logic is available near the front of this brochure. Suffice it to say the KA-V6000 has the most advanced Pro-Logic Decoder available from Kenwood and must be heard to be believed.

Subwoofer and Center Outputs

A separate subwoofer preout gives you the option of hooking up a separate amplifier and low-range speaker unit to reproduce the bass signals that are encoded into the center channel of Dolby* Stereo movies. Its 12 dB per octave roll off above 110 Hz permits direct connection, eliminating the need for an external dividing network.

Auto Input Balance

To achieve the best possible response from the Dolby Pro-Logic decoder a new Auto Input Balance circuit is utilized to match the levels in the left and right channels. If the balance between the two is off the Pro-Logic decoder might send incorrect information to the center channel, degrading the overall effect of the surround effect.

Surround Memory Settings

Not all movies are mixed the same. So not all surround tracks are encoded at the same levels. At times you may want more center channel, sometimes more rear. Instead of having to set these every time the KA-V6000 has the capacity to remember 5 of your favorite settings. Once you tell the unit to remember your settings you can then title the setting for easy reference. Maybe Beetlejuice has a different mix from Batman, and Back to the Future is completely different from those two. Simply title the surround settings the name of the movie you used to set them. An on-screen menu shows you the titles and allows to pick which one you want recalled.

* For Dolby Pro-Logic setups, a discrete center preout is provided.
Component Name Settings

As mentioned, the KA-V6000 can have 12 different components connected to it. With all those units connected you or your family might actually forget what component is connected to what input. The KA-V6000 will allow you to change any of its preset component references (VIDEO 1, VIDEO 2, TAPE 1, PHONO etc.) to whatever you want. Maybe VIDEO 1 is the KV-D957S from Kenwood. Then change VIDEO 1 to say KV-D957S or to say KENWOOD. VIDEO 2 might be an RCA® VCR. Change VIDEO 2 to say that. Then when you are checking the dubbing information you can get the KA-V6000 to dub from your RCA to your KENWOOD instead of just VIDEO 2 to VIDEO 1. It makes things just a little bit easier.

Digital Delay

The delay time from the front to the rear channel is fully digital for the cleanest and most accurate sound possible. The standard BBD delay circuit doesn’t fit the bill when talking about an amplifier of this quality. The delay is adjustable in 1.5 ms increments and is adjustable via remote control from your chair.

Learning Remote Control

In addition to its many other impressive features, the KA-V6000 also comes with a quite remarkable remote control unit. This learning remote is preprogrammed to control many popular Kenwood audio and video components. But, it also can “learn” commands from other remotes—even if they come from manufacturers other than Kenwood. A total learning capacity of 160 programmable functions gives you coverage of virtually any device (audio, video or otherwise) that responds to infrared remote control.

Adapter Loop

If you have the need for extra signal processing such as an equalizer, the KA-V6000 has an Adapter loop built in and available on the back panel. This allows for the cleanest introduction of an external processor.

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Separate Power & Control Amplifiers

These Kenwood amplifiers are for the uncompromising listener, who desires abundant power and exceptional performance. Maximum isolation of switching components from large current interference is achieved through the use of separate control amp and power amp components. For the ultimate in power, control and value, these components have no peers.

**Separated Amp. vs Integrated Amp**

- **Pre amp**
  - **Power amp**
  - **Power Supply**
  - **Integrated amp**
  - ** Separate amp**

**Dynamic Linear Drive**

Dynamic Linear Drive is a threat to deliver dynamic sound but in general don't accurately deliver all the nuances of music. On the other hand a lower power amp designed to give life to all of those nuances can't deliver all the impact of a high power amp. It seems that the perfect solution would be to combine the two. Well, engineers have tried to do this for years but too much of a good thing can do more harm than good. The danger is that the clean specs may hide decidedly unnatural sound. Kenwood's patented Sigma Drive circuit takes negative feedback where it's never been before, to the speakers. It extends the loop to the speakers providing more efficient cancellation of distortion components and at the same time improves amplifier drive efficiency. The resulting high damping factor shows that the circuitry is in control of the speakers for maximum sound efficiency and clarity. You won’t believe how good your speakers can sound until you hook them to an amplifier with Sigma Drive.

**Sigma Drive Circuit**

The three filter buttons on the BASIC-C2 actually acts as four separate filters. The first is a subsonic filter at 18 Hz with a 12 dB per octave rolloff. The Second is a low filter at 40 Hz and third is a high filter at 4 kHz. By depressing the first and second buttons the fourth filter is engaged, a low filter at 58 Hz.

**Four Way Filters**

The volume control on the BASIC-C2 acts not only as a volume attenuation of the signals but also affects the signal path itself so there is no change in phase or impedance during volume adjustment. This is used to not introduce any noise during times of low level listening.

**MM/MC Cartridge Selector**

Today’s proliferation of digital sources will never erase the great musical heritage preserved in the analog LP format. To allow you to hear the treasures of your record collection in all their glory, the BASIC-C2 is equipped with phono equalizer preamp circuits to handle signals from either MM or MC cartridges. Though generally more costly, the lower inertia of the moving coil in an MC design can help to enhance the definition of the reproduced sonic image.

**Low Noise Volume and Tone Controls**

The BASIC-C2 utilizes the finest in tone controls and volume controls available. All units are sealed against dirt entering and causing a scratchy sound over the years.

**Super Coupled Volume Control**

The volume control on the BASIC-C2 acts not only as a volume attenuation of the signals but also affects the signal path itself so there is no change in phase or impedance during volume adjustment. This is used to not introduce any noise during times of low level listening.

**Headphone Connection**

The BASIC-C2 also allows connection of a pair of monitor headphones. The distinction of the BASIC-C2 is that the headphone output actually utilizes a separate amplifier for maximum isolation from the signal sources. Thus the introduction of a headphone into the system will not change the drive or impedance of the unit.
BASIC-C2 Control Amplifier

- MM/MC Cartridge and Impedance Selectors
- Advanced Single NFB Loop Phonograph Equalizer Amplifier
- 2-Way Tape Dubbing with Monitoring
- Source (in/out) Tape Selector
- Two AUX/CD Inputs
- Kenwood NF-IR Tone Controls with Frequency Turnover Selection
- Super-Grounded Volume Control for Low Noise at Low Volume
- 4-Way Filter System
- Loudness Switch
- Mono/Stereo Switch
- Headphone Monitor with Level Control
- Output On/Off Switch
- Power & Output LED Indicators

BASIC-M2A Stereo Power Amplifier

- 220 Watts Per Channel (min. RMS, 8 ohms, 20Hz-20kHz, 0.004% THD)
- Super Dynamic Linear Drive Dual-Output Power Amplifier Circuitry
- Outstanding Low-Impedance Drive Capability
- Dynamic Power Output (EIA) 616 Wtch into 2 ohms
- Wide-Range Fluorescent Peak Power Meters with Selectable Peak-Hold
- Independent L/R Level Controls
- Sigma Drive Type B Speaker Connection
- Damping Factor 1000 at 50 Hz
- Full Circuit Protection with Thermostat-Controlled Fan Cooling
- Two Speaker System Operation
- Gold Plated Input Terminals
- Headphone Jack
- Power Indicator & Muting Relay

BASIC-M1D Stereo Power Amplifier

- 125 Watts Per Channel (min. RMS, 8 ohms, 20Hz-20kHz, 0.008% THD)
- V.I.G. (Voltage Interface Gate)
- DLD (Dynamic Linear Drive)
- Outstanding Low-Impedance Drive Capability
- Dynamic Power Output (EIA) 310 Wtch into 2 ohms
- Wide-Range Fluorescent Peak Power Meters with Selectable Range
- Independent L/R Level Controls
- Sigma Drive Type B Speaker Connection
- Damping Factor 1000 at 50 Hz
- Full Circuit Protection
- Two Speaker System Operation
- Power Indicator & Muting Relay
DPAC and New DPAC

One cause of unnatural sound from CD is a disruption of smooth digital signal flow. Known as "jitter", this misalignment in the time axis can cause the output of the digital-to-analog converter to sound distorted and unnatural.

Kenwood's DPAC (Digital Pulse Axis Control) circuit realigns the signal with a super-accurate master clock in the digital domain. The new DPAC circuit also realigns the output of the D/A in the analog stage to compensate for any time alignment problems in the analog conversion process. The result is a refreshingly natural sound totally free of the digital harshness sometimes associated with CD players.

Linear Full-Bit Twin D/A Converter System

Kenwood's Linear Full-Bit D/A Converter System maintains linearity of all the digital signal components. Lack of linearity is why many manufacturers have started using 18 and 20 bit conversion systems. Kenwood has done the same in our higher end CD players but you can be confident that you lose nothing in our standard 16 bit players. That's just not our style.

The 18 and 20 bit converters also employ our Linear Full-Bit D/A conversion system for the utmost in accuracy.

Block Diagram of New DPAC

New DPAC

Output signal of DAC

Sampling pulse without jitter

-jitter-free and accurate pulses

Output signal of new DPAC with jitter removed

Linear Full-Bit DAC Effect

1 V conversion output with jitter

Distortion waveform observed prior to correction.

1 V conversion output without jitter

Distortion disappeared after MSB, 2SB correction.

DP-7020 Single Drawer 20-Bit Compact Disc Player

- New DPAC (Digital Pulse Axis Control)
- C.C.R.S (Computer Controlled CD Recording System)
- Optimum Serve Control Laser Tracking System
- Twin 20-Bit Full Linear D/A Converters
- 8-Times Oversampling Digital Filter
- Optical Digital Output
- Vibration Damping Dual Laser Chassis
- Top
- Program Edit Function with Random Programming for Easy Tape Copying
- 4 Mode Time Display
- 20 Song Music Calendar
- 20 Track Program Memory
- Timer Play
- Random Play with Disc Memory
- 20-Key Direct Track Access
- Gold Plated Headphone Jack with Level Control
- 3" CD Single Compatible
- Full Function Wireless Remote Control
- System Remote Controllable
- Auto Function
Performance Requirements of DAC

**DIGITAL GAIN ERROR**

**MONOCHROMATICITY**

**INTEGRAL LINEARITY ERROR**

**IMAGE ERROR**

**ANALOG POWER VOLTAGE**

**OFFSET ERROR**

**Oversampling**

Kenwood’s 4-times and 8-times oversampling digital filters eliminate the need for steep “brick wall” filters in the analog domain. The output is fed to linear full-bit twin D/A converters which convert every detail of the original digital signal into analog format with superb linearity. Nothing is lost or altered, so you hear the music in all its original freshness.

**New Multi-Insulation System**

This vibration deadening system employs a 5-point strategy to eliminate internally and externally generated shocks which could detract from accurate reproduction. Comprehensive protection is provided by a 2-layer chassis, special insulators for the disc drive and printed circuit boards, hybrid insulators separating the pickup assembly from the power supply and feet incorporating elastic polymer dampers.

**Full Function Remote Controls**

In addition to the usual functions such as PLAY, PAUSE AND STOP, many of the remotes packaged with the CD players have 10-Key direct access song selection. Some even have 20-Key access for even greater convenience.

**20-Track Direct Access**

The numeric keypads on the front panel and remote control let you skip to the song of your choice by pressing a single key. You can say goodbye to the time consuming business of repeatedly pressing the track skip keys in order to locate a particular selection on a compact disc. For the first 20 tracks on the CD, all you need to do is press the key marked with the same number as the song you want to hear and it begins playing almost immediately.
Your Choice of Four CD Player Configurations

• Single Drawer
The single drawer changer has lost some of its appeal to the general population. But to the discriminating audio listener it is still the configuration of choice. The single drawer format allows easy changing of discs, and easy access to individual songs without waiting for magazines or rotary changers to load the CD. The mechanisms also have the potential to be built stronger and require fewer moving parts as compared to changer types. If you do a great deal of single song recording to cassettes for listening in your car you might want a single drawer CD player for its convenience and sound quality.

• 6-Disc Magazine Changer
The magazine changer has been around for a couple of years now and is ever growing in popularity. The easy to store magazines can be filled with a type of music or a favorite artist and be put in for immediate listening pleasure. Maybe a magazine for Dance music, one for Rock and Roll Classics, boxes or not being able to find exactly what you need for the moment, you can have a series of magazines preloaded. Just insert and go.

• 6+1 Disc Magazine Changer
The convenience of a 6 disc changer goes one step further with the inclusion of a separate single drawer. While the magazine is playing, you can put another disc into the single drawer. Then change CD's at the touch of a button. This is the best of both worlds. The storage and cataloging of a magazine with the simplicity and ease of a single drawer system.

• 5-Disc Rotary Type CD Changer
The DP-R4420 is a new way to enjoy multiple CDs. Its rotary style platter holds up to five discs; that's a possibility of over six hours of uninterrupted music. Once the discs are loaded, all you do is press the appropriate Disc Selector button to begin playing immediately with the CD of your choice. There are fewer moving parts than with a magazine type changer, but you also have the jewel boxes to contend with and the lack of a single drawer possibility.
DP-R4420  Rotary Style Compact Disc Changer
- Disc Rotary Style CD Changer Mechanism • D.P.A.C. (Digital Pulse Axis Control) • C.C.R.S. (Computer Controlled CD Recording System) • Optimum Servo Control Laser Tracking System • Twin 16-Bit Full Bit Linear D/A Converters
- 6 Times Oversampling Digital Filter • Inner Track Audible Scan • 20 Track Program Memory • Timer Play • Random Play • 10-Key Direct Track Access via Remote Control • Gold Plated Headphone Jack with Level Control • 3" CD Single Compatible • Full Function Wireless Remote Control • System Remote Controllable • Auto Function

DP-M6620  6+1 Magazine Type CD Changer with Single Drawer
- Disc Magazine Type CD Changer Mechanism • Additional Single Drawer • D.P.A.C. (Digital Pulse Axis Control) • C.C.R.S. (Computer Controlled CD Recording System) • Optimum Servo Control Laser Tracking System • Twin 18-Bit Full Bit Linear D/A Converters
- 8 Times Oversampling Digital Filter • Optical Digital Output • 32 Track Program Memory • Timer Play • Random Play • 10-Key Direct Track Access via Remote Control • Gold Plated Headphone Jack with Level Control • 3" CD Single Compatible • Single Drawer and with Optional CDM-608 • Full Function Wireless Remote Control • System Remote Controllable • Auto Function

DP-M5520  6 Disc Magazine Type CD Changer
- Disc Magazine Type CD Changer Mechanism • D.P.A.C. (Digital Pulse Axis Control) • C.C.R.S. (Computer Controlled CD Recording System) • Optimum Servo Control Laser Tracking System • Twin 18-Bit Full Bit Linear D/A Converters
- 8 Times Oversampling Digital Filter • 32 Track Program Memory • Timer Play • Random Play • 10-Key Direct Track Access via Remote Control • Gold Plated Headphone Jack with Level Control • 3" CD Single Compatible Single Drawer and with Optional CDM-608 • Full Function Wireless Remote Control • System Remote Controllable • Auto Function

CDM-600
- Optional Disc Magazine
- Single Drawer Loading • Easy Storage Of CD'S Without Jewel Boxes • Mix Drawers with CDM-608 for Greater Flexibility • Compatible with DP-M6620, DP-M5520, DP-M610, DP-M410 and DP-M109

CDM-608
- Optional Disc Magazine
- Single Drawer Loading • Easy Storage Of CD Singles • Mix Drawers with CDM-600 for Greater Flexibility • Compatible with DP-M6620, DP-M5520, DP-M610, DP-M410 and DP-M109
DPD—Direct Pure Decoder Sample & Hold MPX

The KT-5020 uses an advanced digital sample and hold design to decode the stereo signal, not a simple switching system. It reads off the left and right channel information directly, sampling the upper and lower envelopes of the composite signal for increased stereo separation.

DLLD—Direct Linear Loop Detector with DCC Module

The highly linear detector circuit used in the KT-5020 is designed to significantly widen the dynamic range the tuner can handle without distortion, an important consideration as the quality of FM broadcast signals improves. Called the Direct Linear Loop Detector, it extends high and low frequency fidelity and exhibits superior phase characteristics which contribute to accurate sound stage imaging. A special DCC (Distortion Correcting Circuit) module in the demodulator compensates for harmonic distortion generated by IF stage filter characteristics.

DLRC—Direct Linear Reception Circuit

Though it might come as a surprise, conventional tuners employing analog local oscillators often boast better signal-to-noise ratios than their more modern quartz synthesizer cousins. The difference is due to digital noise which can sometimes cover up the subtle, quiet portions of the signal. The Direct Linear Reception Circuit clears up this digital noise while retaining quartz tuning precision. The sound is as good as an analog tuner, but the one-touch tuning convenience remains.

S/N Effect of Linear Reception Synthesizer

Pentacle Power Supply

Kenwood’s innovative pentacle power supply configuration eliminates interference between tuner circuits which can arise if they share a common power supply line. Each of the KT-5020’s circuit stages is connected directly to the power supply. The lack of interference means better definition in the sound you hear.

20-Station Random FM/AM Preset Memory

The KT-5020 lets you store up to 20 AM or FM stations for one-touch recall. The tuner remembers whether each preset is AM or FM, so you don’t have to set the band selector before recalling a station.

Wide/Narrow IF Selector

You can set the IF (intermediate frequency) bandwidth to either wide or narrow. Choose wide for well isolated stations to enjoy optimum phase linearity. If you experience interference from adjacent channels, switch to the narrow IF bandwidth for increased selectivity. Though it sounds complicated, the selector is actually very easy to use. Just switch between the two settings to see which sounds better for the station in question.

Automatic Quieting Control

Unlike the monostereo selector found on most tuners, the KT-5020’s automatic quieting control helps to mute inter-station noise while still allowing reception of weaker stations.

Flex-On Circuit Board Suspension System

The circuit boards in the KT-5020 are supported by a special suspension system that helps dampen frame and external vibrations which could interfere with the accurate operation of their precision electronic components.

System Remote Controlled Operation

The KT-5020 is controllable via the system remote control. You can access all the presets and even scan the presets from your chair.
Quartz PLL Direct Drive
The KD-4020's quartz phase locked loop direct drive system minimizes the wow & flutter which can cause small pitch fluctuations in the reproduced sound. No belts, or other speed step-down devices means steady, stable operation. In addition, motor rotations are constantly monitored by a servo control system that is phase locked to a highly accurate quartz reference frequency. It immediately makes corrections to maintain the correct speed the instant any deviation is detected.

Automatic Operation—Auto Lead-In and Auto Return
More than just a convenience, automatic tonearm operation guards your records and the phono stylus from slip-ups that can occur even with the most careful manual handling. At the beginning of the record, the tonearm automatically goes to the lead-in groove. It then rises and returns to the arm rest after play finishes.

Linear Tonearm
For the ultimate in tracking accuracy, the KD-4020 features a linear tracking tonearm. Instead of pivoting in an arc as the record plays, the entire tonearm moves toward the center, parallel to the record grooves. This arrangement assures optimal tracking angle at all times and is less prone to skipping caused by record bumps and scratches.
Dolby HX-Pro Headroom Extension
Unlike Dolby B and C, which are designed to reduce noise, Dolby HX-Pro works to widen the dynamic range of the tape. It operates independently of noise reduction to extend high frequency headroom for better handling of treble signal peaks. It uses a “sliding band” technique to dynamically adjust the recording bias and prevent excessive “self biasing” which occurs because of the high frequency components in the audio signal itself. Since Dolby HX-Pro only works in the record mode, tapes recorded using Dolby HX-Pro can be played back on decks not equipped with the system.

Frequency Response Improvement with Dolby HX-Pro (Normal Tape)

Auto-Bias Adjustment
Most cassette decks have three tape selector settings—normal, high and metal. But the recording bias currents for each are calibrated using a standard reference tape and don’t take into account the differences—sometimes quite considerable—in actual bias requirements for different tape brands.
At the touch of a button, auto-bias adjustment automatically fine tunes the recording bias to match any tape. It helps to make sure that your recordings reflect the best that the tape is able to produce.

Precision Auto-Reverse Mechanism
Kenwood auto reverse cassette decks utilize a rotary head to assure consistently superior performance on both tape sides. This system allows for the independent alignment of each tape side with the heads so there is no loss of high frequencies as with a standard 4 track cassette head.

Two Decks in a Single Chassis
The KX-W8020 and KX-W6020 each boast dual tape transports, so operations which used to require two separate decks can be accomplished with just one.
Synchronized control makes tape dubbing and editing a breeze. Now you need never experience the frustration ruined recordings caused when one cassette transport starts just a little too late.
And since both transports are equipped with auto-reverse, you can listen to up to three hours of uninterrupted music without changing cassettes (with two C-90 cassettes).

Dubbing in Half the Time
The high speed dubbing function makes copying tapes a quick, foolproof operation. Copying a C-60 cassette requires only 30 minutes. On decks equipped with full electronic logic the dubbing process is done at the touch of a single button.

Remote Control
All major cassette deck functions are accessible using Kenwood System Remote Controls for convenient armchair operation.

16 Track Access—What if you want to go ahead or 4 songs not just one. With DPSS you just press FF or RWD the number of songs you wish to advance or rewind. Remember in RWD the song you are on counts as one.
Index Scan—plays the first 10 seconds of each song
Re-Recording Standby—if you make a mistake while recording simply press RWD and the tape will go back to where you last started recording and enter the REC pause mode so you can try again.
Dash and Play—Press the FF and RWD buttons together and the deck will go into the play monitor mode. If there is 15 seconds of silence on the tape the unit will fast forward to the next available song.
Single Selection Repeat—Press Play during playback and the current song will repeat.
- Dual Bi-Directional Recording/Playback
- Dolby HX-Pro Headroom Extension (Deck B)
- Auto-Bias Adjustment (Deck B)
- C.C.R.S. (Computer Controlled CD Recording System)
- D.P.S.S. (Direct Program Search System)
- Full Logic Computer Controlled Tape Transport with 2-Motor Drive
- Dolby C and B NR Systems
- Separate Record Level and Record Balance with Center Detent
- Independent Control for A and B Cassette Wells
- Continuous Relay Play
- One Touch Normal and High-Speed Dubbing
- Timer Recording and Playback
- Index Scan (Deck A)
- Automatic Tape Selector
- Multi-Function Fluorescent Information Display
- System Remote Controllable
- Auto Function

**KX-W6020 Double Auto-Reverse Cassette Deck**

- Double Auto-Reverse Cassette Mechanism
- Dolby HX-Pro Headroom Extension (Deck B)
- Auto-Bias Adjustment (Deck B)
- C.C.R.S. (Computer Controlled CD Recording System)
- D.P.S.S. (Direct Program Search System)
- Full Logic Computer Controlled Tape Transport with 2-Motor Drive
- Dolby C and B NR Systems
- Separate Record Level and Record Balance with Center Detent
- Independent Control for A and B Cassette Wells
- Continuous Relay Play
- One Touch Normal and High-Speed Dubbing
- Timer Recording and Playback
- Index Scan (Deck A)
- Automatic Tape Selector
- System Remote Controllable
- Auto Function

**KX-4520 3-Head Stereo Cassette Deck**

- 3-Head Tape Transport
- Dolby HX-Pro Headroom Extension
- C.C.R.S. (Computer Controlled CD Recording System)
- Closed Loop Dual Capstan Drive
- Auto-Bias Adjustment
- Dolby C and B NR Systems
- Tape Path Stabilizer
- 210 kHz Bias
- Separate Record Level and Record Balance with Center Detent
- Switchable MPX Filter
- Automatic/Manual Tape/Source Selector
- Feather Touch Full Logic Controlled Mechanism
- 5-Key Wireless Remote Control
- Linear Tape Counter
- Remote Controllable
KX-3510 Auto-Reverse Stereo Cassette Deck

- Auto-Reverse Mechanism with 2-Track Rotary Head Mechanism
- Dolby HX-Pro Headroom Extension
- Automatic Bias Adjustment
- Tape Path Stabilizer
- Large Fluorescent Display with Linear Tape Counter
- Direct 16-Program Search System (D.P.S.S.)
- Index Scan
- Separate Record Level and Record Balance with Center Detent
- Blank Search
- Feather Touch Full Logic Controlled Mechanism
- Re-recording Standby
- Timer Record and Play
- Automatic Tape Selector
- System Remote Controllable
- Auto Function

KX-2520 Auto-Reverse Stereo Cassette Deck

- Auto-Reverse Mechanism with 2-Track Rotary Head Mechanism
- Dolby HX-Pro Headroom Extension
- C.C.R.S. (Computer Controlled CD Recording System)
- D.P.S.S. (Direct Program Search System)
- Dolby C and B NR Systems
- Index Scan
- Separate Record Level and Record Balance with Center Detent
- Feather Touch Full Logic Controlled Mechanism
- Timer Record and Play
- Automatic Tape Selector
- System Remote Controllable
- Auto Function

KX-2020 Stereo Cassette Deck

- Dolby HX-Pro Headroom Extension
- C.C.R.S. (Computer Controlled CD Recording System)
- D.P.S.S. (Direct Program Search System)
- Dolby C and B NR Systems
- Index Scan
- Separate Record Level and Record Balance with Center Detent
- Feather Touch Full Logic Controlled Mechanism
- Timer Record and Play
- System Remote Controllable
- Auto Function
GE-5020 7-Band Electronic Graphic Equalizer

ACCESSORY

1. Indicators for learn and transmit
2. Learn/Use mode
3. 3 Mode Selectors (Audio/Video/AUX)
4. Tape/Video controls
5. CD/DVR and controls with disk select for multiple players, +10 key input
6. Ten-key Input for audio, TV or video
7. TV Operations with TV/video selector, channel select, volume adjustment
8. System Memory controls
9. Phono controls with automatic play & stop
10. Input Select (CD, equalizer, phono, tape 1 & 2, tuner, video 1/AUX, 2, 3 & 4)
11. Center, Surround, Test Tone, & On Screen Menu modes
12. Delay Time controls
13. Center Level controls
14. Rear Level controls
15. Volume controls & Muting
16. Audio, TV, Video power ON/OFF

Learning Remote Control

The RC-200 is the only remote control unit you’ll ever need. Capable of controlling a full Kenwood system, including volume adjustment and video components, it also lets you customize its operation to cover virtually any other remote controllable component. It has the capability of controlling CD players, Video Disc Players, TV’s, plus 6 different cassette tape mechanisms including VCR’s. The RC-200’s ability to learn up to 160 functions in addition to the Kenwood remote functions it already knows should be enough to meet your needs now and in the future.
Super Woofer
Kenwood Super Woofer systems firmly establish the sonic underpinnings for true high fidelity sound. Deep bass that’s tight and alive, not boomy or flabby. Seamless integration with the midrange and treble frequencies—all in an attractive space-saving format. A Super Woofer system is a loudspeaker solution for today, and tomorrow.

Solid Bass without Boominess or Muddiness
Kenwood’s Super Woofer systems provide innovative solutions to a variety of problems which have traditionally plagued conventional speaker systems. Principle among these is the perennial conundrum of how to achieve powerful low bass response without interfering with midrange and treble clarity.

The solution: a 3-D configuration consisting of a separate bass unit—the Super Woofer—and a pair of satellite speakers with frequency characteristics perfectly matched with it and each other. Using separate speaker cabinets for low and for mid-high keeps mutual interference to a minimum and results in a truly astonishing boost in definition and realism.

Compact Dimensions
Three speaker cabinets instead of two might seem too much for the average home listening room. But the Super Woofer configuration actually ends up saving space while it improves performance. The low range unit can be put away out of sight. It doesn’t even need to be right in the center. And since the satellites contain only the midrange and treble drivers, they’re quite elegantly compact.

A Unified Sonic Image from Three Sources
Audio specialists use the term “3-0” to describe arrangements like the Super Woofer system which use a single subwoofer—not two bass drivers as in conventional speaker systems. One low range unit can do the job because low bass energy—unlike the higher frequencies—does not seem to emanate from any single direction when we listen to music. Rather, it appears to well up around the listener, providing a sonic basis for the entire musical fabric.
For this reason, a 3-D system is actually able to provide more convincing low bass response than most conventional speaker systems. Being in a separate cabinet, the bass drivers do not interfere with the optimum functioning of the midrange and tweeter, so the higher frequencies are clear and well defined. The low range unit is maximized for its specific frequency range. It even contains an "acoustic filter" to attenuate the upper midbass and midrange elements which could defeat its purpose by adding spurious localization cues and muddying the output from the satellites.

**Easy Installation**

Some 3-D systems almost require you to become an audio engineer by making you fool around with complicated crossover networks and labyrinth connections. But installing a Super Woofer system is a breeze. The standard left and right amplifier speaker output terminals are all it uses.

---

**LS-W9010 Super Woofer System**

**LS-W900 Super Woofer**
- Dual-Chamber, Acoustic Bass Resonator
- Acoustic High-Cut Filter
- 8-Inch Twin Bass Drivers with Non-Pressed Cone Diaphragms
- Simulated Woodgrain Finish

**LS-S500 Satellite Speaker System**
- Slim Floor Standing Design
- Low Resonance Cabinet
- Acoustic Suspension Construction
- Symmetrically Balanced High Coherency 2-Way, 3-Speaker System
- Twin 4-1/2 Inch Polypropylene Cone Midrange
- Central 1-Inch Dome Tweeter with Spherical Wave Baffle
- Simulated Woodgrain Finish
- 180 W Maximum Input Power (as System)
- Frequency Response: 30 Hz—20 kHz (as System)
LS-W7010 Super Woofer System

LS-W700 Super Woofer
- Dual-Chamber, Acoustic Bass Resonator
- Acoustic High-Cut Filter
- 6-1/2 Inch Twin Bass Drivers with Non-Pressed Cone Diaphragms
- Simulated Woodgrain Finish

LS-S500 Satellite Speakers
- Slim Floor Standing Design
- Low Resonance Cabinet
- Acoustic Suspension Construction
- Symmetrically Balanced High Coherency 2-Way, 3-Speaker System
- Twin 4-1/2 Inch Polypropylene Cone Midrange
- Central 1-Inch Dome Tweeter with Spherical Wave Baffle
- Simulated Woodgrain Finish
- 160 W Maximum Input Power (as System)
- Frequency Response: 30 Hz—20 kHz (as System)

LS-W5010 Super Woofer System

LS-W900 Super Woofer
- Dual-Chamber, Acoustic Bass Resonator
- Acoustic High-Cut Filter
- 8-Inch Twin Bass Drivers with Non-Pressed Cone Diaphragms
- Simulated Woodgrain Finish

LS-S300 Satellite Speakers
- Right Angle Pentagonal Design for Easy Room Positioning
- Acoustic Suspension Construction
- Symmetrically Balanced 2-Way, 2-Speaker System
- 4-1/2 Inch Polypropylene Cone Midrange
- 1-Inch Dome Tweeter with Spherical Wave Baffle
- Simulated Woodgrain Finish
- 180 W Maximum Input Power (as System)
- Frequency Response: 30 Hz—20 kHz (as System)

LS-W3010 Super Woofer System

LS-W700 Super Woofer
- Dual-Chamber, Acoustic Bass Resonator
- Acoustic High Cut Filter
- 6-1/2 Inch Twin Bass Drivers with Non-Pressed Cone Diaphragms
- Simulated Woodgrain Finish

LS-S300 Satellite Speakers
- Right Angle Pentagonal Design for Easy Room Positioning
- Acoustic Suspension Construction
- Symmetrically Balanced 2-Way, 2-Speaker System
- 4-1/2 Inch Polypropylene Cone Midrange
- 1-Inch Dome Tweeter with Spherical Wave Baffle
- Simulated Woodgrain Finish
- 140 W Maximum Input Power (as System)
- Frequency Response: 30 Hz—20 kHz (as System)
## SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td><strong>Input Section</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Output (PIM)</td>
<td>1000W per channel max</td>
<td>1000W per channel max</td>
<td>1000W per channel max</td>
<td>600W per channel max</td>
<td>400W per channel max</td>
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<tr>
<td>(Next)</td>
<td>800W all channels driven at 1kHz with no more than 0.9% THD</td>
<td>800W all channels driven at 1kHz with no more than 0.9% THD</td>
<td>800W all channels driven at 1kHz with no more than 0.9% THD</td>
<td>400W all channels driven at 1kHz with no more than 0.9% THD</td>
<td>200W all channels driven at 1kHz with no more than 0.9% THD</td>
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<td>0.006%</td>
<td>0.006%</td>
<td>0.006%</td>
<td>0.006%</td>
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<td>Input Sensitivity/Frequency Response</td>
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<td>0.006% at 1kHz</td>
<td>0.006% at 1kHz</td>
<td>0.006% at 1kHz</td>
<td>0.006% at 1kHz</td>
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<tr>
<td>Frequency Response</td>
<td>20kHz to 20kHz ±0.2dB</td>
<td>20kHz to 20kHz ±0.2dB</td>
<td>20kHz to 20kHz ±0.2dB</td>
<td>20kHz to 20kHz ±0.2dB</td>
<td>20kHz to 20kHz ±0.2dB</td>
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<tr>
<td>Frequency Response</td>
<td>550kHz to 8MHz ±0.2dB</td>
<td>550kHz to 8MHz ±0.2dB</td>
<td>550kHz to 8MHz ±0.2dB</td>
<td>550kHz to 8MHz ±0.2dB</td>
<td>550kHz to 8MHz ±0.2dB</td>
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<tr>
<td><strong>Video Section</strong></td>
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<tr>
<td>Video Input</td>
<td>1 Vp-p 75 ohms</td>
<td>1 Vp-p 75 ohms</td>
<td>1 Vp-p 75 ohms</td>
<td>1 Vp-p 75 ohms</td>
<td>1 Vp-p 75 ohms</td>
</tr>
<tr>
<td>Video Output</td>
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<td>1 Vp-p 75 ohms</td>
<td>1 Vp-p 75 ohms</td>
<td>1 Vp-p 75 ohms</td>
<td>1 Vp-p 75 ohms</td>
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<td><strong>Audio Section</strong></td>
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<tr>
<td>Tone Control</td>
<td>Basic - 100% at 1kHz</td>
<td>Basic - 100% at 1kHz</td>
<td>Basic - 100% at 1kHz</td>
<td>Basic - 100% at 1kHz</td>
<td>Basic - 100% at 1kHz</td>
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<td><strong>Audio Characteristics</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Frequency Response</td>
<td>20kHz to 20kHz ±0.2dB</td>
<td>20kHz to 20kHz ±0.2dB</td>
<td>20kHz to 20kHz ±0.2dB</td>
<td>20kHz to 20kHz ±0.2dB</td>
<td>20kHz to 20kHz ±0.2dB</td>
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<tr>
<td>Sensitivity</td>
<td>550kHz to 8MHz</td>
<td>550kHz to 8MHz</td>
<td>550kHz to 8MHz</td>
<td>550kHz to 8MHz</td>
<td>550kHz to 8MHz</td>
</tr>
<tr>
<td>Intermodulation Distortion</td>
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<td>0.006%</td>
<td>0.006%</td>
<td>0.006%</td>
<td>0.006%</td>
</tr>
<tr>
<td>Input Sensitivity</td>
<td>0.006% at 1kHz</td>
<td>0.006% at 1kHz</td>
<td>0.006% at 1kHz</td>
<td>0.006% at 1kHz</td>
<td>0.006% at 1kHz</td>
</tr>
</tbody>
</table>

### CW, CD, VCR Compatibility
- **CW (Continuous Wave)**
  - Reception: 1200 Hz
  - **CD (Compact Disc)**
  - Reception: 1200 Hz
- **VCR (Video Cassette Recorder)**
  - Reception: 1200 Hz

### Additional Specifications
- **Dimensions (WxHxD):** 17.92 x 14.14 x 18.34
- **Weight:** 32.4 lbs

### Other Features
- **Power Consumption:** 54 watts
- **AC socket:** 54VAC (on 2-levels)
- **Dimensions (WxHxD):** 17.92 x 14.14 x 18.34
- **Weight:** 32.4 lbs

### Notes
- All specifications are subject to change without notice.
- Specifications may vary depending on specific model.
- For detailed information, refer to the manufacturer's manual.
**KO-4020**

**TURNTABLE**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Drive System</td>
<td>Direct Drive</td>
</tr>
<tr>
<td>Motor</td>
<td>20 Hz, 30 Hz, 3 Phase Business Motor</td>
</tr>
<tr>
<td>Turntable Rate</td>
<td>15.3 rpm</td>
</tr>
<tr>
<td>Speed</td>
<td>2 Speeds, 33 1/3 and 45 rpm</td>
</tr>
<tr>
<td>Base &amp; Rotation</td>
<td>48 ohms</td>
</tr>
<tr>
<td>Flange</td>
<td>1000 (Cm Weighted)</td>
</tr>
<tr>
<td><strong>TONEARM</strong></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Linear Tracking Sneak</td>
</tr>
<tr>
<td>Effective Streak Length</td>
<td>3.34 m</td>
</tr>
<tr>
<td>Tracking Error</td>
<td>0.5%</td>
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<tr>
<td><strong>CARTRIDGE</strong></td>
<td></td>
</tr>
<tr>
<td>Functional Cartridge</td>
<td>V-15</td>
</tr>
<tr>
<td>Stylus</td>
<td>OE-H Diamond</td>
</tr>
<tr>
<td>Replacement Stylus</td>
<td>N-75 with 66 id Diamond</td>
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<tr>
<td>Frequency Range</td>
<td>20Hz - 20kHz</td>
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<tr>
<td>Output Voltage</td>
<td>2.9V / 1kHz, 5orted.</td>
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<tr>
<td>Load Impedance</td>
<td>47 ohms</td>
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<tr>
<td><strong>SUPPLIED ACCESSORY</strong></td>
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</tr>
<tr>
<td><strong>GENERAL</strong></td>
<td></td>
</tr>
<tr>
<td>Power Requirement</td>
<td>AC 100W, 60Hz</td>
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<tr>
<td>Power Consumption</td>
<td>17W</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>17.5 x 4.56 x 15.56</td>
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<tr>
<td>Weight (Net)</td>
<td>6.8 lbs</td>
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**GE-6020**

**GRAPHIC EQUALIZER**

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<tbody>
<tr>
<td>Equalizer Characteristics</td>
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</tr>
<tr>
<td>Variable Crossover</td>
<td>4 kHz (200µV)</td>
</tr>
<tr>
<td>Individual Channel Adjust</td>
<td>4 kHz (200µV)</td>
</tr>
<tr>
<td>Bass 30Hz - 100Hz</td>
<td>400Hz</td>
</tr>
<tr>
<td>Treble 10kHz - 20kHz</td>
<td>5kHz</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>Less than 0.05%</td>
</tr>
<tr>
<td>Gain</td>
<td>0.5 ± 1 dB</td>
</tr>
<tr>
<td>Maximum Output Voltage</td>
<td>3Vrms (15kHz)</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>1kHz - 10kHz, +1dB - 3dB</td>
</tr>
<tr>
<td>Signal to Noise Ratio</td>
<td>100dB (Input: 3kHz, 4kHz)</td>
</tr>
<tr>
<td>Input Impedance</td>
<td>10k ohms</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>600 ohms</td>
</tr>
<tr>
<td>Power Requirement</td>
<td>AC 120V, 60Hz</td>
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<tr>
<td>AC Output</td>
<td>Unspecified x 1 (200µV)</td>
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<td>Power Consumption</td>
<td>20W</td>
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<tr>
<td>Dimensions (W x H x D)</td>
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<td>Weight (Net)</td>
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**KA-V6000**

**AV AMPLIFIER**

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<tbody>
<tr>
<td>Power Output (Front)</td>
<td>20W per channel (surround)</td>
</tr>
<tr>
<td>Power Output (Center)</td>
<td>10W per channel (surround)</td>
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<tr>
<td>Power Output (Rear)</td>
<td>70W per channel (surround)</td>
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<tr>
<td>Line Impedance</td>
<td>10k ohms</td>
</tr>
<tr>
<td>Intermodulation Distortion</td>
<td>Less than 0.05%</td>
</tr>
<tr>
<td>Intermodulation Distortion (Hz)</td>
<td>1kHz ±3dB</td>
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<tr>
<td>Frequency Response</td>
<td>50Hz - 10kHz ±0.5% ±3dB</td>
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<tr>
<td>Input Sensitivity/Impedance</td>
<td>2.5V/4kΩ (RMS)</td>
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<tr>
<td><strong>SUPPLIED ACCESSORY</strong></td>
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<td><strong>GENERAL</strong></td>
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<td>Power Requirement</td>
<td>AC 100V, 60Hz</td>
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<td>Power Consumption</td>
<td>33A</td>
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<td>Dimensions (W x H x D)</td>
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<td>Weight (Net)</td>
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# Super Woofer System LS-W9010 (LS-W900 + LS-S500)

<table>
<thead>
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<th>Speakers</th>
<th>LS-W900</th>
<th>LS-S500</th>
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<tbody>
<tr>
<td>System</td>
<td>2 Way 2 Speaker Super Woofer System</td>
<td>2 Way 2 Speaker Subwoofer Speaker for Super Woofer System</td>
</tr>
<tr>
<td>Type</td>
<td>Dual Tired Port Acoustic Bass Radiator</td>
<td>Acoustic Air Suspension</td>
</tr>
<tr>
<td>Mounted Drs.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Low Frequency Driver</td>
<td>8&quot; Cone Type x 2</td>
<td>4 1/2&quot; Polypropylene Cone Type x 2</td>
</tr>
<tr>
<td>High Frequency Driver</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Floor Standing Type</td>
<td>Acoustic Air Suspension Floor Standing Type</td>
</tr>
<tr>
<td>Maximum Input Power</td>
<td>1600W as Complete System</td>
<td>1600W as Complete System</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>90dB as Complete System</td>
<td>90dB as Complete System</td>
</tr>
<tr>
<td>Rated Input Power</td>
<td>95W as Complete System</td>
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<td>Frequency Response</td>
<td>30Hz–20kHz as Complete System</td>
<td>30Hz–20kHz as Complete System</td>
</tr>
<tr>
<td>Impedance</td>
<td>8 ohms</td>
<td>8 ohms</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>15.1&quot; x 7.3&quot; x 14.5&quot;</td>
<td>15.1&quot; x 7.3&quot; x 14.5&quot;</td>
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<tr>
<td>Weight (Net)</td>
<td>32 lbs</td>
<td>32 lbs</td>
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<tr>
<td>Endfinish</td>
<td>High Density Particle Board Laminate with Simulated Wood Grain Finish</td>
<td>High Density Particle Board Laminate with Simulated Wood Grain Finish</td>
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# Super Woofer System LS-W7010 (LS-W700 + LS-S300)

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<th>LS-W700</th>
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<td>System</td>
<td>2 Way 2 Speaker Super Woofer System</td>
<td>2 Way 2 Speaker Subwoofer Speaker for Super Woofer System</td>
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<td>Type</td>
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<td>Low Frequency Driver</td>
<td>6 1/2&quot; Cone Type x 2</td>
<td>4 1/2&quot; Polypropylene Cone Type x 2</td>
</tr>
<tr>
<td>High Frequency Driver</td>
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<td>-</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Floor Standing Type</td>
<td>Acoustic Air Suspension Floor Standing Type</td>
</tr>
<tr>
<td>Maximum Input Power</td>
<td>1000W as Complete System</td>
<td>1000W as Complete System</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>90dB as Complete System</td>
<td>90dB as Complete System</td>
</tr>
<tr>
<td>Rated Input Power</td>
<td>85W as Complete System</td>
<td>85W as Complete System</td>
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<tr>
<td>Frequency Response</td>
<td>30Hz–20kHz as Complete System</td>
<td>30Hz–20kHz as Complete System</td>
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<tr>
<td>Impedance</td>
<td>8 ohms</td>
<td>8 ohms</td>
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<tr>
<td>Dimensions (W x H x D)</td>
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<td>15.1&quot; x 8.4&quot; x 14.1&quot;</td>
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<tr>
<td>Weight (Net)</td>
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<tr>
<td>Endfinish</td>
<td>High Density Particle Board Laminate with Simulated Wood Grain Finish</td>
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# Super Woofer System LS-W5010 (LS-W900 + LS-S300)

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<th>LS-W900</th>
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<td>System</td>
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</tr>
<tr>
<td>Type</td>
<td>Dual Tired Port Acoustic Bass Radiator</td>
<td>Acoustic Air Suspension</td>
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<tr>
<td>Mounted Drs.</td>
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<td>-</td>
</tr>
<tr>
<td>Low Frequency Driver</td>
<td>8&quot; Cone Type x 2</td>
<td>4 1/2&quot; Polypropylene Cone Type x 2</td>
</tr>
<tr>
<td>High Frequency Driver</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Floor Standing Type</td>
<td>Acoustic Air Suspension Floor Standing Type</td>
</tr>
<tr>
<td>Maximum Input Power</td>
<td>1000W as Complete System</td>
<td>1000W as Complete System</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>90dB as Complete System</td>
<td>90dB as Complete System</td>
</tr>
<tr>
<td>Rated Input Power</td>
<td>90W as Complete System</td>
<td>90W as Complete System</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>30Hz–20kHz as Complete System</td>
<td>30Hz–20kHz as Complete System</td>
</tr>
<tr>
<td>Impedance</td>
<td>8 ohms</td>
<td>8 ohms</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>9.3&quot; x 13.2&quot; x 9.8&quot;</td>
<td>9.3&quot; x 13.2&quot; x 9.8&quot;</td>
</tr>
<tr>
<td>Weight (Net)</td>
<td>66 lbs</td>
<td>66 lbs</td>
</tr>
<tr>
<td>Endfinish</td>
<td>High Density Particle Board Laminate with Simulated Wood Grain Finish</td>
<td>High Density Particle Board Laminate with Simulated Wood Grain Finish</td>
</tr>
</tbody>
</table>

---

# Super Woofer System LS-W3010 (LS-W700 + LS-S300)

<table>
<thead>
<tr>
<th>Speakers</th>
<th>LS-W700</th>
<th>LS-S300</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>2 Way 2 Speaker Super Woofer System</td>
<td>2 Way 2 Speaker Subwoofer Speaker for Super Woofer System</td>
</tr>
<tr>
<td>Type</td>
<td>Dual Tired Port Acoustic Bass Radiator</td>
<td>Acoustic Air Suspension</td>
</tr>
<tr>
<td>Mounted Drs.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Low Frequency Driver</td>
<td>6 1/2&quot; Cone Type x 2</td>
<td>4 1/2&quot; Polypropylene Cone Type x 2</td>
</tr>
<tr>
<td>High Frequency Driver</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Floor Standing Type</td>
<td>Acoustic Air Suspension Floor Standing Type</td>
</tr>
<tr>
<td>Maximum Input Power</td>
<td>600W as Complete System</td>
<td>600W as Complete System</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>90dB as Complete System</td>
<td>90dB as Complete System</td>
</tr>
<tr>
<td>Rated Input Power</td>
<td>50W as Complete System</td>
<td>50W as Complete System</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>30Hz–20kHz as Complete System</td>
<td>30Hz–20kHz as Complete System</td>
</tr>
<tr>
<td>Impedance</td>
<td>8 ohms</td>
<td>8 ohms</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>9.3&quot; x 13.2&quot; x 9.8&quot;</td>
<td>9.3&quot; x 13.2&quot; x 9.8&quot;</td>
</tr>
<tr>
<td>Weight (Net)</td>
<td>23 lbs</td>
<td>23 lbs</td>
</tr>
<tr>
<td>Endfinish</td>
<td>High Density Particle Board Laminate with Simulated Wood Grain Finish</td>
<td>High Density Particle Board Laminate with Simulated Wood Grain Finish</td>
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</table>
### Amplifier Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Power Output</th>
<th>THD</th>
<th>Frequency Response</th>
<th>Input Impedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC-M2A</td>
<td>20W per channel (Minimum RMS)</td>
<td>-</td>
<td>DC-20kHz with no more than 0.006% THD</td>
<td>47k ohms (balanced), 10k ohms (unbalanced)</td>
</tr>
<tr>
<td>BASIC-M10</td>
<td>50W per channel (Minimum RMS)</td>
<td>-</td>
<td>DC-20kHz with no more than 0.006% THD</td>
<td>47k ohms (balanced), 10k ohms (unbalanced)</td>
</tr>
<tr>
<td>BASIC-C2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>L-1000C</td>
<td>120W per channel (Minimum RMS)</td>
<td>2%</td>
<td>DC-20kHz with no more than 0.0008% THD</td>
<td>47k ohms (balanced), 10k ohms (unbalanced)</td>
</tr>
<tr>
<td>L-1900M</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Turntable Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Tracking Error</th>
<th>Signal to Noise Ratio</th>
<th>Dynamic Range</th>
<th>Interchannel Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>KT-5020</td>
<td>0.1% ± 0.01dB</td>
<td>-85dB</td>
<td>80dB SNR</td>
<td>88 dB</td>
</tr>
<tr>
<td>L-1900T</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Kenwood follows a policy of continuous advancement in development.
For this reason specifications may be changed without notice.

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