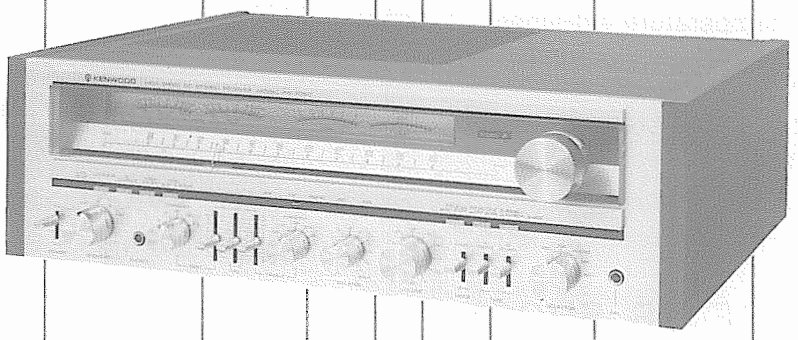
HIGH SPEED DC STEREO RECEIVER

KR-7050

INSTRUCTION MANUAL



KENWOOD

INTRODUCTION

You are no doubt anxious to hook up your new receiver and settle back to hear the object of your purchase — superior sound. To this end, let us help you to integrate the receiver into your system. Take the time to read through this manual carefully. Knowing how to set up your receiver to best advantage will enhance your listening pleasure right from the start. You will also become aware of the ease with which you can adjust your receiver to meet your special requirements.

FOR YOUR RECORDS

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your Kenwood dealer for information or service on this product.

Model KR-7050 Serial number_____

UNPACKING

Unpack the unit carefully and make sure that all accessories and FM indoor antenna are put aside so they will not be lost.

Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

INSTALLATION PRECAUTIONS

a) Avoid locations subject to direct sunlight.
b) Avoid high or low temperature extremes.
c) Keep the receiver away from heat-radiating sources.
d) Make sure power is off before making any system connections.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT!

U.S.A. AND CANADA

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only. These units are not equipped with an AC Voltage Selector switch and the discussion of such a switch that follows should be disregarded.

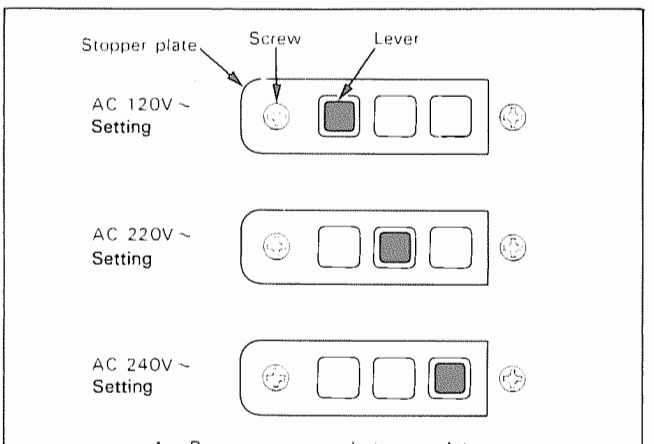
ALL OTHER COUNTRIES

Units shipped to countries other than the U.S.A. and Canada are equipped with an AC Voltage Selector switch on the rear panel. Refer to the following paragraph for the proper setting of this switch.

AC VOLTAGE SELECTION

This unit operates on 120 volts, 220 volts or 240 volts AC. The AC Voltage Selector Switch is set to the AC voltage generally available in the country where it is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your AC line voltage. If not, it must be properly changed in accordance with the directions below.

Note:
Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC Voltage Selector Switch.



1 Remove screw and stopper plate.
2 Slide lever to your line voltage.
3 Lock lever with stopper plate and screw.

AC Voltage Selector Switch

CONTENTS

SAFETY PRECAUTIONS

CLEANING

Do not use volatile solvents such as alcohol, paint thinner, gasoline, benzine, etc. to clean the cabinet. Use a silicone cloth or a clean dry cloth.

VENTILATION HOLES

The case top is slotted to allow ventilation. Never block these holes with ornamental cloths, books or other objects. Make sure that metal objects such as coins, hairpins or needles do not enter the unit through the ventilation holes. The result could be a serious malfunction or a possible shock hazard. Make sure that children do not insert foreign objects into the ventilation holes.

MODIFICATIONS AND SERVICE

Each unit is shipped after it has been carefully adjusted and tested to provide optimum performance. The unit must not be modified internally. Unauthorized modifications will void the terms of the warranty. High voltages are used in some of the internal circuits. Therefore, do not remove the cabinet or touch internal parts. Refer all service to qualified service personnel.

POWER CORD

Always insert or remove the power plug from the AC outlet by grasping the plug body. Never pull or stretch the cord. Take care that the cord is not subject to traffic or bent sharply around furniture. Keep heavy objects off the cord; never route it under rugs, and avoid the use of extra extension cords. Attention to these precautions will avoid fire or shock hazards.

ACOUSTIC FEEDBACK

Occasionally a disturbing howling sound caused by acoustic feedback, may be heard. This is generally caused by the relative positions of the turntable and speaker enclosures. The sound pressure radiated from the speaker surrounds and vibrates the turntable.

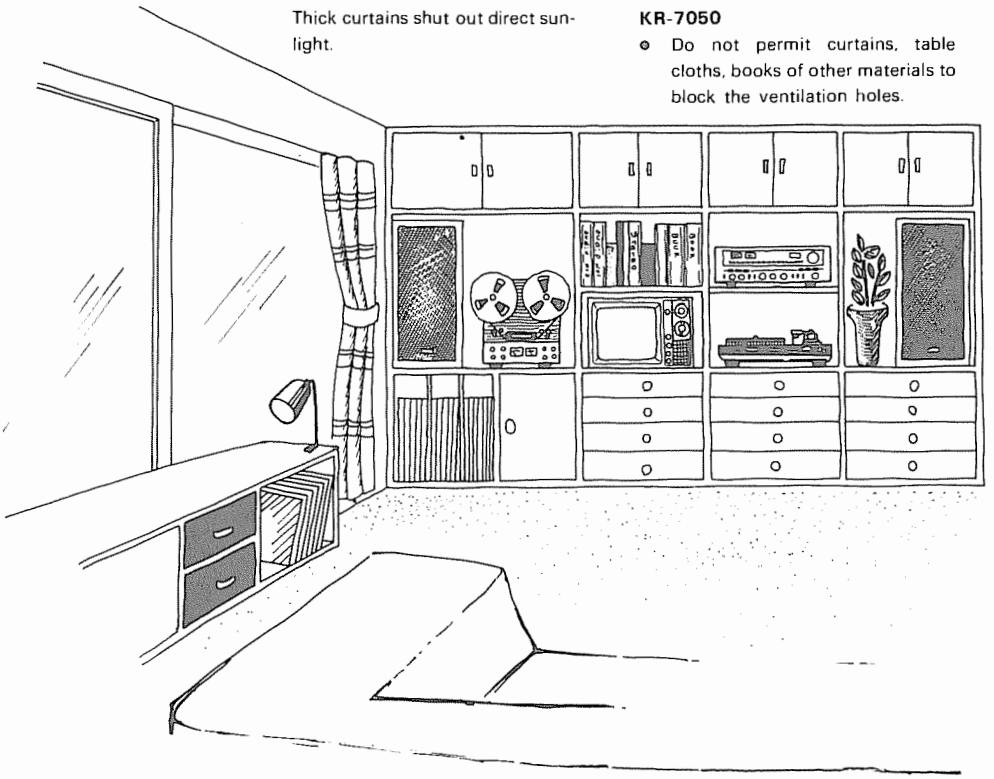
This vibration is picked up by the cartridge, sent to the unit as an electrical signal, and returned to the speaker. This again causes the speakers to radiate vibration which induces sympathetic vibrations in the turntable and cartridge. Sympathetic vibrations are reinforced with each repeating cycle and result in an undesirable sound called oscillation or "howling". To prevent it, keep your turntable away from your speakers. Also, mounting your turntable on shock-absorbing pads may help.

SPEAKER-SYSTEM PROTECTION

Your KR-7050 is capable of supplying very high power to your speakers. To prevent speaker damage due to accidental surges, such as may be caused by inadvertently dropping the stylus onto a record, make it a habit to reduce volume before changing records, switching between program sources or turning power ON.

Check the power-handling ability of your speakers and make sure that the power supplied is within their limits. Excessive power can permanently damage your speakers.

SYSTEM PLANNING CONSIDERATIONS



Thick curtains shut out direct sunlight.

KR-7050

- Do not permit curtains, table cloths, books of other materials to block the ventilation holes.

Speaker System

- Speakers placed in front of a hard surface such as a wall, will generate more bass response.
- For best stereo reproduction, both speakers should work into the same acoustic conditions.

Turntables

- Protect from vibration and close dust cover whenever possible.
- Store records vertically and protect from dust and dirt.

Tape Decks

- Be sure to install reel clamps when using vertically.
- Always keep heads clean.
- Do not neglect recorded tape for long periods.
- Avoid magnetic fields.

Carpets

Absorb sound

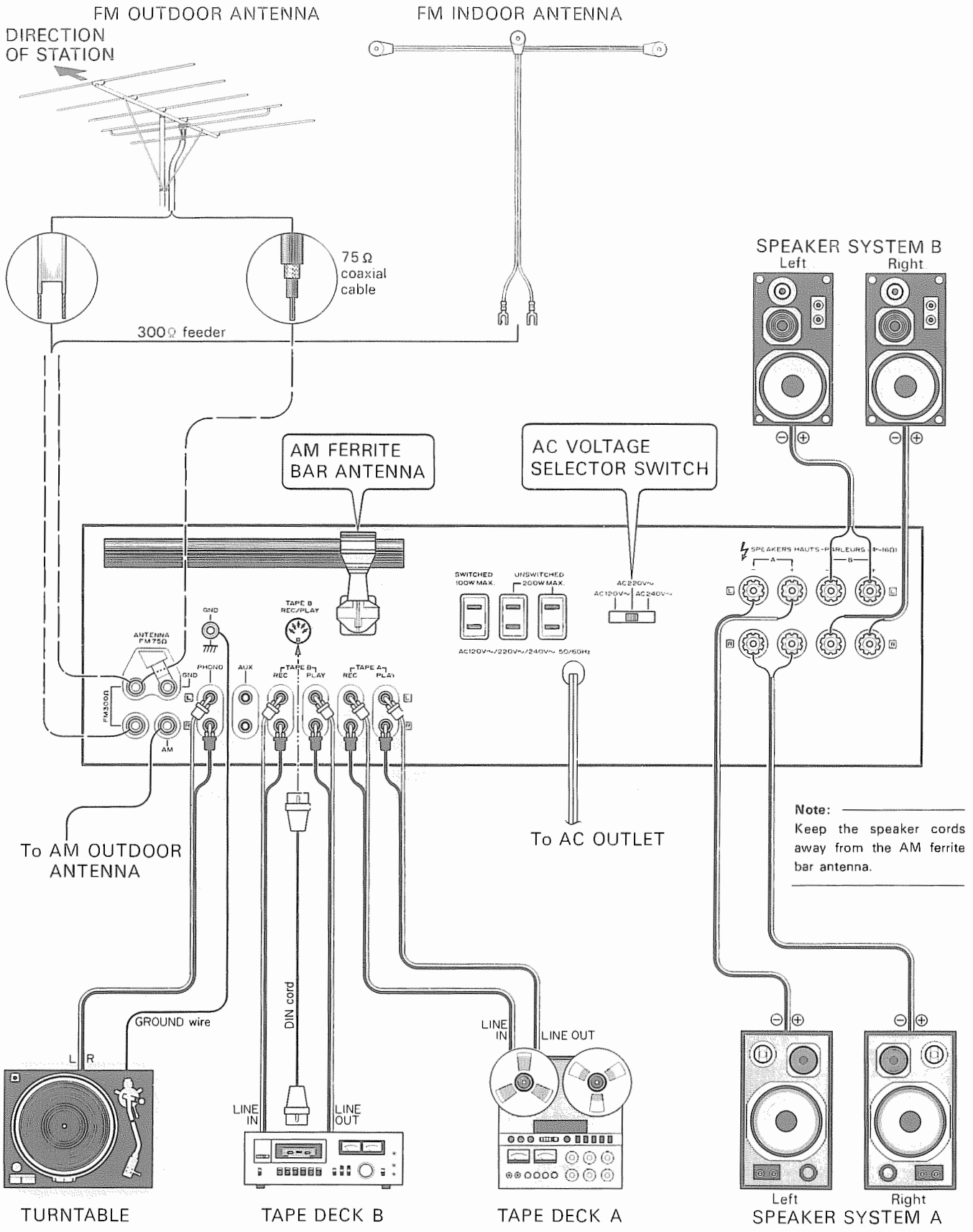
(Placing in front of speakers is also effective.)

- Furniture materials can improve tone.
- For better sound, install curtains or drapes on the wall opposite the speakers.
- The best listening position is on a line perpendicular to the center of a line drawn between the two speakers.

FEATURES

1. High-speed amplifiers afford outstanding transient response: slew rate 200 volts per microsecond, rise time 0.9 microseconds.
2. DC coupling throughout the audio amplifier section assures flat frequency response down to DC (zero Hz) to provide superior phase response at the low frequency range of human hearing.
3. Sophisticated equalizer using FETs and single-ended push-pull output provides precision phono equalization and high signal-to-noise ratio.
4. Professional instrumentation. Four illuminated meters provide read out of peak power from both stereo channels, antenna signal strength, and FM center-channel tuning.
5. Highly sensitive front end features dual-gate MOS FETs for protection against the effects of signal overload.
6. Wide and Narrow IF band selection for superior FM performance under difficult reception conditions.
7. Pilot-signal canceller circuit for best high-frequency sound from stereo FM broadcasts.
8. Facilities for operation with two tape decks.
9. Operating convenience from facilities for: dual speaker systems, subsonic and high filters, FM muting, loudness control, de-emphasis selection.

SYSTEM CONNECTION DIAGRAM



SYSTEM CONNECTIONS

SPEAKERS

If only one set of speakers is to be connected, make connections to the terminals marked SPEAKERS A, as shown on page 5. Connect the speakers to the [L] and [R] terminals in accordance with the location selected for each speaker. To ensure correct speaker phasing, observe polarity marks; connect terminals marked + on the receiver to similarly-marked speaker terminals. Do the same for receiver and speaker terminals marked with a minus sign. Reversal of speaker leads will result in loss of bass tones and poor stereo separation.

If a second set of speakers is to be used, make connections at the right set of terminals, marked B.

It should be noted that pairs of speakers must be connected to SPEAKERS terminals A and B, if sound is to be heard when the SPEAKERS switch is set to the A + B position. In this setting the speakers connected to the A and B terminals are put in series. Therefore, if there are no speakers connected to the B terminals, no sound will be heard from the A speakers when the SPEAKERS switch is set to A + B.

When connecting the speaker leads to the speaker terminals, make sure that the bare wire strands at the ends of the speaker leads do not touch the adjacent terminal.

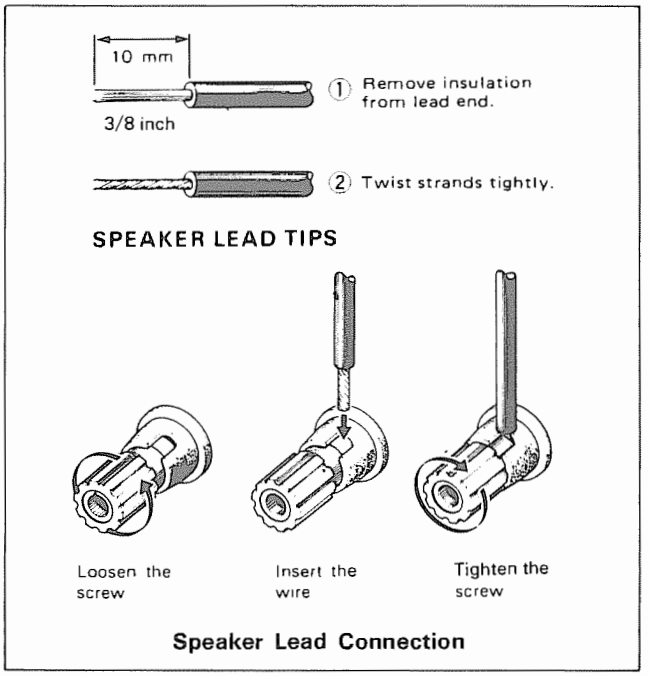
It is recommended that the tips of the speaker leads be soldered, or the strands of individual leads be twisted together to eliminate any possibility of short-circuits forming in the speaker connecting network.

Note:
Speaker impedance must be 4-ohms or more if only one set of speakers is to be connected or when a pair is connected to both the A and B terminals.

TURNTABLES

Your stereo turntable has two audio cables that are terminated with phono plugs. Plug the left channel plug into the [L] and the right channel plug into the [R] PHONO INPUT jacks as shown on page 5.

If the turntable has a ground wire, connect it to the unit's GND terminal to avoid hum.



Speaker Lead Connection

TAPE DECKS

If only one tape deck is to be connected to the system it is recommended that it be connected to the jacks marked TAPE A.

Tape deck input and output cables are normally terminated with phono plugs.

Playback

Plug the left and right output cables of the tape deck into the [L] and [R] TAPE A PLAY jacks.

Record

Plug the left and right input cables of the tape deck into the [L] and [R] TAPE A REC jacks.

DIN Connector

If your tape deck is equipped with a DIN connector, connect it to the TAPE B REC/PLAY connector with the DIN connecting cord. The DIN connection makes both input and output connections with a single cord, and the signal must be controlled with the TAPE B switch on the front panel.

Note:
If connections are made with a DIN connecting cord, the TAPE B PLAY and REC jacks should not be used.

Second Tape Deck

Plug the input and output cables from the second tape deck into the REC and PLAY jacks marked TAPE B.

SYSTEM CONNECTIONS

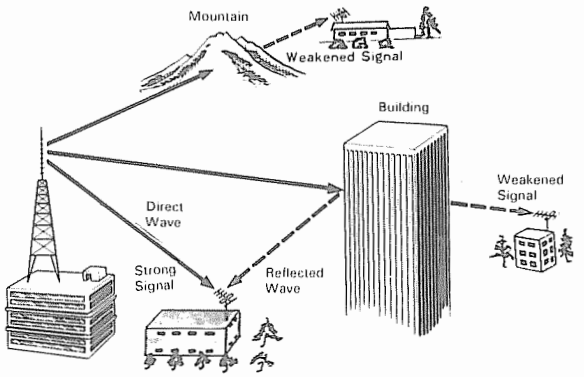
AUX JACKS

INPUT AUX jacks are used to connect other high-level signal sources, such as tuners, extra tape decks (equipped with preamps), TV or VTR sound output, mic preamps, etc.

FM ANTENNA

Your KR-7050 approaches the theoretical limit in FM sensitivity. However, the performance of your system is determined to a very large extent upon the signal conditions where the antenna is placed. The reason is that FM broadcast signals travel in straight paths. Therefore they can be blocked by natural or man-made obstructions such as mountains, hills, or buildings. At large distances from the transmitter the curvature of the earth acts as a screen between transmitter and receiver.

Consider the signal conditions in planning your installation. If you live in or near an urban area the indoor antenna (supplied) may serve your needs adequately. However, if favorite stations are weak due to natural obstructions, or if you live in a building which is made of steel-reinforced concrete (which acts as a shield) it may be necessary to install a good outdoor antenna.



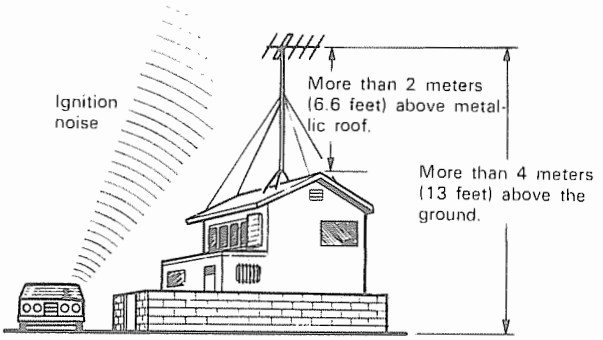
Direct Wave and Reflected Wave

FM Indoor Antenna

Connect the T-shaped indoor antenna (supplied) to the 300Ω FM ANTENNA terminals as shown in the SYSTEM CONNECTION DIAGRAM. Spread the two arms that form the top of the "T" horizontally and hold them against convenient wall surfaces. Try several locations for best results on your favorite stations. Tape the antenna in place where the best compromise is found between listening results and appearance.

FM Outdoor Antennas

Consult with your dealer or service man about the best method of selecting and installing an outdoor FM antenna. The choice of lead-in (feeder) wire is also important. The flat ribbon-shaped twin lead performs well electrically, is cheaper and is somewhat easier to handle in routing through windows and around rooms. Coaxial cable is more expensive, does a much better job of minimizing interference, is less prone to the effects of weather and close-by metal objects, and is nearly as good a signal conductor as the ribbon type wire. The latter is particularly true of foam-type coaxial cables. Coaxial cable is somewhat more difficult to install at the point where the cable enters the building. If coaxial cable is selected, make sure the antenna is designed to drive that type of cable. In many cases a matching transformer (balun) must be used to connect the antenna terminals to the coaxial cable.



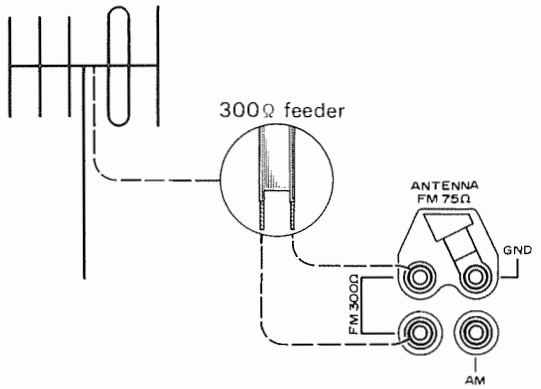
- To minimize auto-ignition noise, locate the antenna as far from heavy traffic as possible.
- Keep the feeder or coaxial cable as short as possible. Do not bundle or roll up excess cable.
- The antenna should be at least two meters (6.6 feet) from reinforced concrete walls, or metal structures.

FM Outdoor Antenna Installation

SYSTEM CONNECTIONS

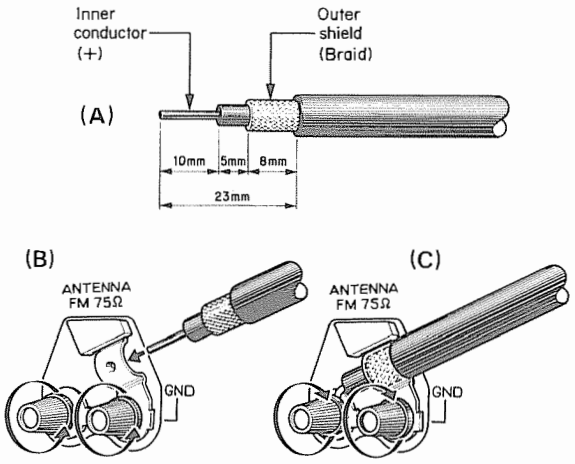
Lead-In Connections at the Receiver

To connect 300Ω ribbon type cable, cut the ribbon down the center of the insulation about 60 mm (2-3/8 inches) to separate the two wires. Strip the plastic insulation from the wire ends for about 10 mm (3/8 inch) and connect to the 300Ω FM ANTENNA terminals as shown for the 300Ω feeder connection.



300Ω Feeder Connection

To connect 75Ω coaxial cable, strip the outer plastic jacket off the cable for a length of 23 mm (15/16 inch). Follow the steps in the drawing.



Strip the coaxial cable as shown in (A).
Loosen the terminals and connect the cable as shown in (B).
Then tighten all terminals for a connection as shown in (C).

75Ω Coaxial Cable Connection

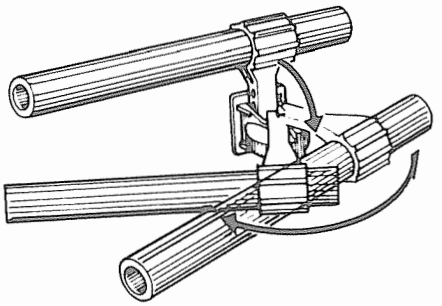
Note:

Do not make connections to 300Ω and 75Ω terminals simultaneously.

AM ANTENNA

AM Bar Antenna

Tune in your favorite AM station and position the ferrite-bar antenna for best reception. Try other stations and find the position that gives best overall reception.



Keep the AM ferrite bar antenna away from the rear panel.

AM Antenna Setting

AM Outdoor Antenna

In most cases the very sensitive ferrite-bar antenna will provide excellent results. However, in steel buildings or at a great distance from the transmitter, it may be necessary to install an outside long-wire antenna. The end of this wire should be stripped of insulation and connected to the AM terminals as shown on page 5.

GROUND

For maximum safety and minimum interference connect the GND terminal to a good earth ground if practicable. A good earth ground is a cold water pipe or a metal stake driven into moist earth.

DE-EMPHASIS SWITCH (Bottom Plate)

Before shipment this switch has been set to the appropriate setting for the expected delivery area.

An incorrect setting will adversely affect high frequency response of FM reception. Check for the correct setting before putting the unit into operation.

U.S.A. and U.S. Military ..... 75 μs

Note:

The front-panel FM 25μs switch alters de-emphasis for use with Dolby* FM broadcasts. See page 11.

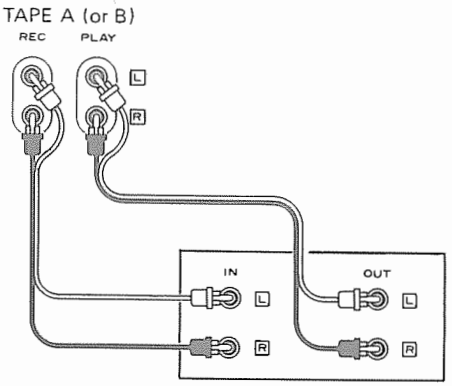
* Dolby is the trademark of Dolby Laboratories

SYSTEM CONNECTIONS

DOLBY ADAPTORS

A Dolby Noise-Reduction adaptor may be connected to the TAPE A or B jacks in place of a tape deck to facilitate noise reduction on FM broadcasts that feature Dolby operation.

1. Connect the Dolby NR adaptor to TAPE jacks A or B as shown in the figure.



DOLBY NR ADAPTOR

2. Set the SELECTOR to FM and tune in the station that is transmitting Dolby-corrected audio.
3. Set the appropriate TAPE switch (B if you have connected the adaptor to the B jacks) to PLAY.
4. Press in the FM 25μs button on the front panel. (Remember to reset this button, press again to make it pop out, when Dolby Noise Reduction is not in use.)

AC OUTLETS

The AC outlets on the rear panel of the unit may be used to supply power to other components in the system, such as a turntable, tape deck, etc. Never connect equipment whose power consumption exceeds the maximum value shown at each outlet.

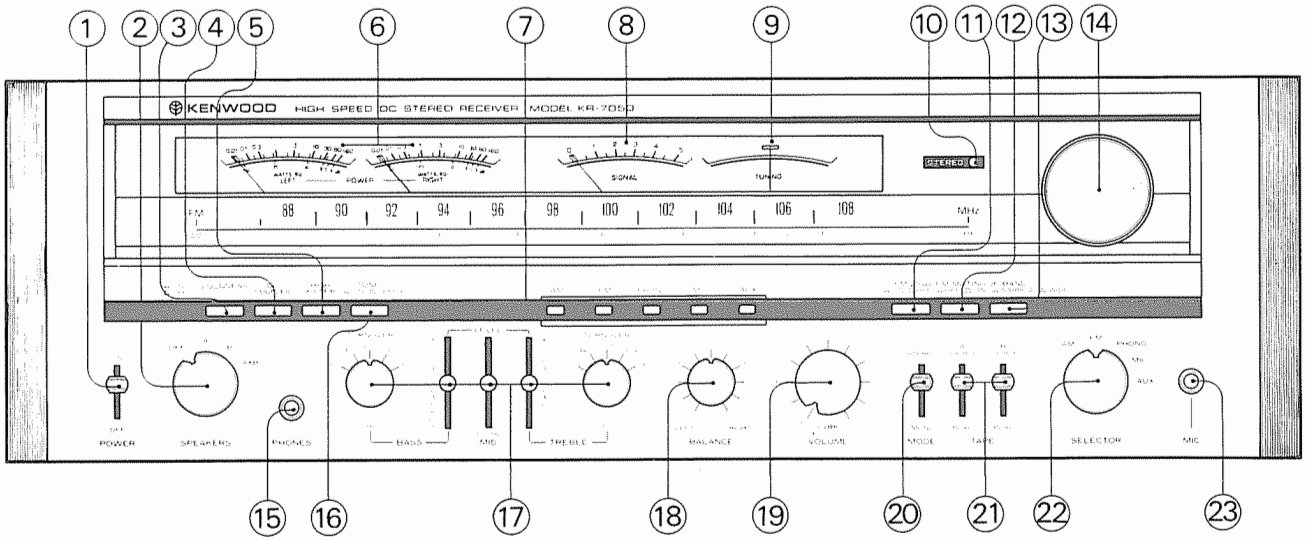
1. SWITCHED outlet: This outlet supply power only when the KR-7050 is turned on. Its maximum capacity is 100 watts.
2. UNSWITCHED outlets: These outlets provides power when the unit is plugged into an active AC wall outlet, regardless of the setting of the POWER switch. Their maximum total capacity is 200 watts.

CONNECTION PRECAUTIONS

Be sure that connector plugs are firmly inserted into their respective jacks. Poor connections may cause no sound output. They may also generate noise.

Do not bunch antenna feeder lines and interconnecting cords together with the AC line or speaker cords. Doing so can cause interference, and also may adversely affect sound quality.

CONTROLS, INDICATORS AND CONNECTORS



① **POWER switch**

ON — Turns the receiver on.

OFF — Turns the receiver off.

② **SPEAKER switch**

OFF — This position silences all speakers to permit private use of headphones.

A — Activates speakers connected to the SPEAKERS A terminals on the rear panel.

B — Activates speakers connected to the SPEAKERS B terminals on the rear panel.

A+B — Activates speakers connected to the SPEAKERS A and B terminals simultaneously.

③ **LOUDNESS switch**

ON — Bass notes are boosted at low listening levels. This precisely offsets the characteristics of human hearing whereby we are less sensitivity to bass notes at very low listening levels.

OFF — The low-level bass boost is removed and the VOLUME control provides flat response at all settings.

④ **DC COUPLED switch**

Switch ON to obtain DC (direct) coupling through all amplifier circuits from the Tape and Aux inputs to the speaker terminals. A single coupling capacitor is inserted into the chain for Phono operation only. This provides a totally flat response for low frequency tones. The DC equalizer and DC power amplifier chains are in use for Phono operation, but the input circuits are AC coupled. (Magnetic phono cartridges do not respond to DC or static values).

With the switch set to OFF, a single coupling capacitor is inserted into the Tape and Aux inputs. This capacitor is also put into the Phono chain for a total of two capacitors. When DC COUPLED is turned OFF, frequencies below 18 Hz are attenuated at the rate of 6 dB per octave. This provides filtering of subsonic signals and is useful in reducing turntable rumble or the effects of warped records. Always switch to OFF if you suspect a DC leak from your signal source. Such a leak will result in a steady displacement of your speaker cones if the DC COUPLED switch remains on.

⑤ **HIGH FILTER switch**

Pressing this button in (latched) reduces signals above 5 kHz at the rate of 6 dB per octave. Press this button in to lessen the effects of tape hiss, record scratch, etc. Press to unlatch (button out) in all other cases.

⑥ **POWER meters**

The POWER meters show the effective power being delivered to your speakers. Unlike conventional VU meters these power meters respond instaneously to rapid changes in music level and follow andante and crescendo passages to provide a true indication of the effective power your speakers are handling at all times. A logarithmic compression circuit permits a wide range of readings, from 0.01 W to 160W without the need of range switching. The meters are calibrated for an 8-ohm load. If 4-ohm speakers are used, multiply the reading by 2; for 16-ohm speakers, divide the reading by 2.

⑦ **INDICATOR lamps**

Indicators marked AM, FM, PHONO, MIC and AUX light to show the mode selected by the SELECTOR switch.

⑧ **SIGNAL meter**

This meter indicates the strength of AM or FM signals received. It is used as a tuning aid for both AM and FM tuning and very useful in making antenna adjustments.

⑨ **TUNING meter**

This meter gives a precise indication of correct FM tuning. Maximum stereo separation and minimum distortion are obtained when the receiver is tuned to center the pointer on the meter scale.

⑩ **STEREO indicator**

The STEREO indicator lights while the MODE switch is set to STEREO and FM stereo broadcast is received.

CONTROLS, INDICATORS AND CONNECTORS

⑪ FM 25μs (De-emphasis) switch

Selects a 25μs de-emphasis value for correct frequency response with Dolby FM broadcasts. A Dolby decoder must be added to the system, as shown on page 9. Press in when the selected FM station transmits Dolby-corrected recordings. Press again to release for all other operating modes.

⑫ FM MUTING switch

This switch silences interstation noise on the FM band, but it may also eliminate the signal of a weak and distant station along with the interstation noise. Therefore, set this switch to OFF (by pressing button release) for reception of weak and distant stations.

⑬ IF BAND selector

WIDE — For normal use and minimum distortion.

NARROW — If a very strong adjacent channel interferes with a desired weak channel.

⑭ TUNING knob

AM and FM stations are selected by turning this knob.

⑮ PHONES jack

Stereo headphones are plugged into this jack.

⑯ TONE switch

In the DEFEAT position the TONE controls are bypassed and a frequency response is flat. In the ON position the TONE controls are activated.

⑰ TONE controls

The BASS, MID and TREBLE controls adjust bass, mid-range and treble response. Each lever controls both left and right channels equally. Moving the levers up increases bass, mid-range and treble response, and down decreases bass, mid-range and treble response. You can select the bass and treble TURNOVER frequencies (80 Hz, 140 Hz, 250 Hz, 450 Hz or 800 Hz for bass control, 800 Hz, 1.4 kHz, 2.5 kHz, 4.5 kHz or 8 kHz for treble control) with the TURNOVER switches.

Since both frequency and level can be controlled independently, quite pricise adjustments are possible to suit the acoustic conditions of your listening room and speakers.

⑱ BALANCE control

This control permits balancing of left and right channels when an imbalance exits from the sound source, or to correct acoustic imbalance due to room conditions. Turn it to the left from the zero position to boost the left channel; turn it to the right of zero to raise the level of the right channel.

⑲ VOLUME control

This control adjusts left - and right - channel volume simultaneously. Set it for the desired listening level. The scale is provided with dB graduations to indicate attenuation when maximum output level conrresponds to 0 dB.

⑳ MODE switch

STEREO — This provides stereophonic reproduction from any stereo program source. The left channel is heard from the left speaker, and the right channel is heard from the right speaker.

MONO — Monophonic reproduction. The left and right channels are mixed together and heard from both speakers.

㉑ TAPE switches

A, B SOURCE — The signal applied to the record terminals of the tape deck is heard.

A PLAY — To monitor a recording in progress or to play back a tape from a tape deck connected to the TAPE A jacks.

B PLAY — To monitor a recording in progress or to play back a tape from a tape deck connected to the TAPE B jacks.

A, B PLAY — Dubbing is made from a tape deck connected to the TAPE B jacks to a tape deck connected to the TAPE A jacks. The recording condition in the tape deck A is automatically monitored.

Note:

Be sure to set both TAPE switches to "SOURCE" when not operating the tape deck(s).

㉒ SELECTOR switch

AM — for reception of AM broadcasts.

FM — for reception of FM broadcasts.

PHONO — Audio from turntables connected to the PHONO input jacks.

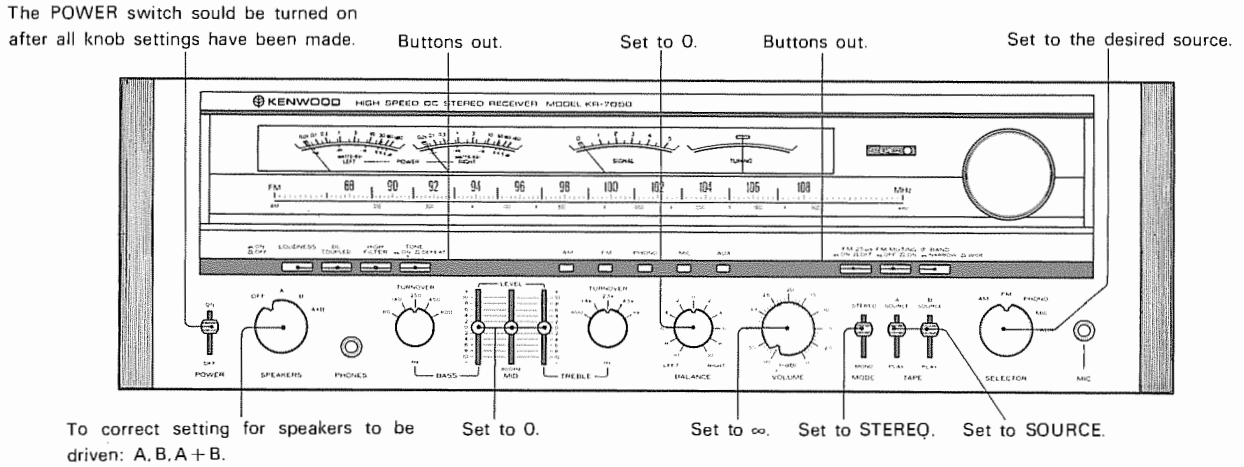
MIC — Audio from a source connected to the MIC jack is heard.

AUX — Audio from a source connected to the AUX jacks is heard.

㉓ MIC jack

Plug a high-impedance microphone into this jack (monophonic sound only).

OPERATING INSTRUCTIONS

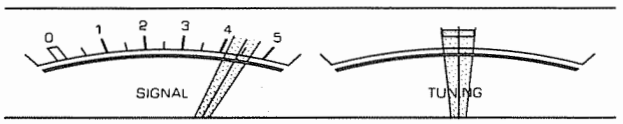


BEFORE APPLYING POWER

Set all operating controls as shown above before applying power for the first time.

FM RECEPTION

1. Set the SELECTOR switch to "FM".
2. Turn the tuning knob to place the dial pointer at the desired channel frequency. Fine tune first for a maximum reading on the SIGNAL meter then tune carefully to center the pointer on the TUNING meter.



3. Adjust volume and tone controls for your perference.

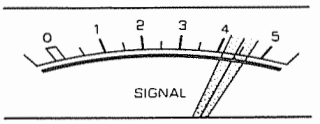
ABNORMAL CONDITIONS

1. If a station does not appear at the correct tuning spot on the dial, set MODE switch to "MONO". If the station is then heard it is exceptionally weak and the MODE switch must remain in "MONO" for that channel unless some effort is made in the antenna system to raise signal.
2. If the desired channel is interfered with from a very strong nearby channel, set the IF BAND selector to NARROW.
3. When the IF BAND selector is switched from WIDE to NARROW, meter deflection increases. This is a normal result of the change in IF circuitry.

   Tune the receiver once again for distortion-free reception while observing the TUNING meter.

AM RECEPTION

1. Set the SELECTOR switch to AM.
2. Turn the TUNING knob to the desired station. Make fine tuning adjustments by observing the SIGNAL meter and tuning for maximum pointer deflection (to the right).



3. Adjust volume and tone for your preference.

TAPE DECKS

Tape Playback

1. Set the appropriate TAPE switch (A or B) to PLAY to select output from a tape deck connected to the Tape A or B jacks. (The setting of the SELECTOR switch affects speaker output only when both TAPE switches are set to SOURCE.)
2. Operate the tape deck.
3. Adjust volume and tone for your preference.

Monitoring

If tape deck is equipped with three heads, you can compare the sound quality of the recording in progress with that of the source material by switching the appropriate TAPE switch between SOURCE and PLAY while the recording is being made.

Recording (one tape deck)

1. Set the SELECTOR switch to the desired program source. Both TAPE switches may be set to SOURCE. However, to monitor the output signal of your tape deck while the recording is in progress, set the appropriate TAPE switch to PLAY.

2. Set up your tape deck for recording and set recording levels with the controls on your tape deck. The volume, filter and tone controls on the receiver do not affect the signal applied to the tape deck for recording purposes.
3. Adjust listening level and tone at the receiver for your preference in monitorning the signal; these settings will not affect the recording.

Recording (two tape decks)

1. Set the SELECTOR switch to the desired program source.
2. Recordings can now be made on both tape decks simultaneously.
   To monitor the recording, set the TAPE A switch to PLAY, keeping the TAPE B switch at SOURCE. It is impossible to monitor the recording in tape deck B when recording with two tape decks.
3. Recording levels should be set using the controls on the individual tape decks.

Tape-To-Tape Dubbing (Duplicating)

Tape-to-tape dubbing can be easily done with two tape decks. The recorded tape should be loaded on tape deck B, and a blank tape for recording, on tape deck A. This is because the dubbing in the unit is available only from tape deck B to tape deck A.

1. Set both TAPE switches to "PLAY".
2. Operate both tape decks together. Record ing in tape deck A is automatically monitored.

Note:

The setting of the SELECTOR switch does not affect this operation. Adjust record levels on the deck that is making the copy using that deck's operating controls.

TURNTABLES

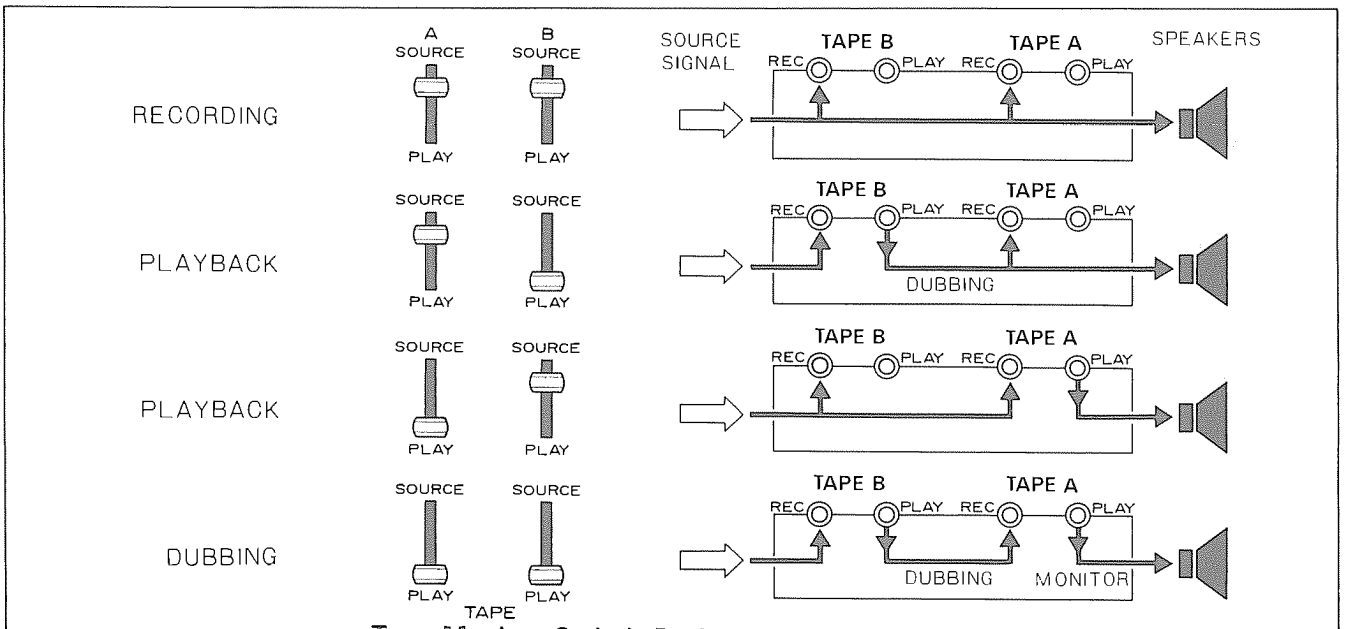
1. Set the SELECTOR switch to PHONO.
2. Operate the turntable.
3. Adjust volume and tone controls for your preference.

MICROPHONES

1. Plug a high-impedance microphone into the MIC jack (monophonic microphones only).
2. Turn VOLUME all the way down and set the SELECTOR to MIC.
3. Advance VOLUME to the desired level, but keep the microphone away from the speakers to avoid "howling" due to acoustic feedback.
4. Microphone recordings may be made by following the RECORDING instructions given earlier.

AUX

1. Set the SELECTOR switch to AUX.
2. Operate the component or accessory connected to the AUX jacks.
3. Adjust volume and tone controls for your preference.



Tape Monitor Switch Position and Source Signal

IN CASE OF DIFFICULTY

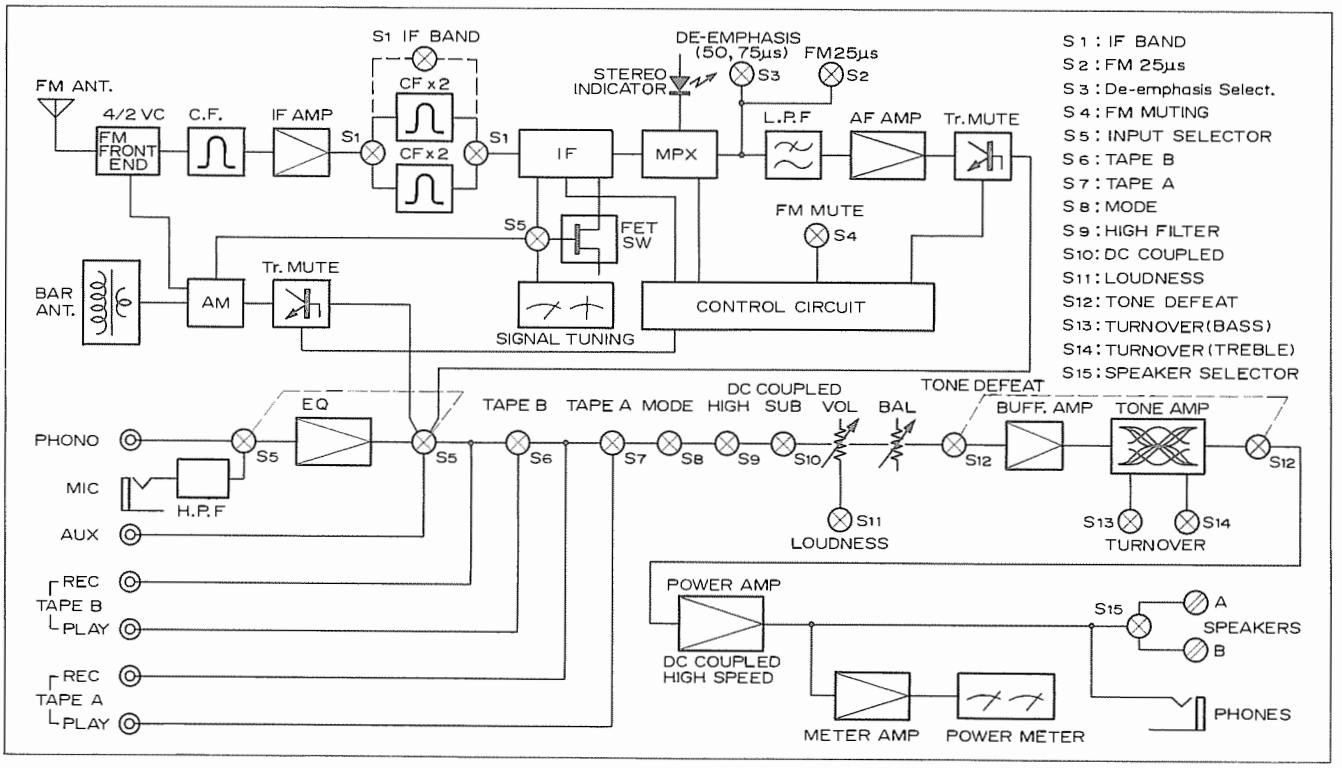
If your receiver should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your Kenwood dealer or service representative.

AM, FM, PHONO or Tape playback	CAUSE	REMEDY
Meters lights out, no sound, power on.	a) Power cord not plugged in. b) Poor connection at wall outlet. Power outlet inactive.	a) Check plug contact. b) Check outlet using a lamp or other appliance (outlet may be controlled by a wall switch).
No sound from left or right.	a) SPEAKER switch set to A + B. b) Speaker cords disconnected. c) SPEAKERS switched off. d) Volume control fully CCW. e) Tape switches set to PLAY.	a) Speakers must be connected to both A and B terminals; see page 6. b) Check speaker connections. c) Check SPEAKERS switch. d) Adjust volume. e) Set to SOURCE except when tape decks are in use.
Sound from left or right, but not both.	a) Poor speaker connections. b) Defective speaker. c) BALANCE set to one extreme or the other.	a) Check connections at both ends of speaker cord. b) Reverse speakers, if problem stays with speaker have speaker checked. c) Check setting of BALANCE control.
Noise when POWER is switched on or volume is adjusted immediately after.	Insufficient warmup.	Allow 2-3 seconds for warmup before adjusting volume.
Phono level differs from FM or AM level	Low or high output from phono cartridge.	May be normal; adjust volume accordingly.
Occurs during AM reception only	**CAUSE**	**REMEDY**
Continuous low-frequency buzz. Most noticeable on weak stations or at night.	Interference from fluorescent lamps, lamp dimmers, other appliances.	Turn off fluorescent lamps or lamp dimmer (Interference may come from neighbors lamps.) Try AM outdoor antenna and good ground at GND connections. This problem may be impossible to remove altogether.
High-frequency whistle especially at night.	a) Interference from TV set. b) Beat from adjacent AM station.	a) Turn off TV set, if problem disappears try relocating TV set. b) Impossible to eliminate, but try HIGH filter.
Intermittent buzz or crackling sound.	a) Lightning b) Fluorescent lamps starting. c) Appliance or furnance starting.	a) No remedy. b) Try reversing AC plug. c) Try reversing AC plug.
Occurs During FM Reception only	**CAUSE**	**REMEDY**
Continuous hiss or buzzing with broadcast	Weak antenna signal	Install outdoor antenna.
Occasional sharp rhythmic crackling noise.	Ignition interference from autos.	Locate outdoor antenna as far from road as possible, use coaxial feeder cable.
No sound on weak stations	Signal too weak to overcome muting.	Switch MODE to MONO. Install outdoor antenna and orient for highest reading on SIGNAL meter.
Poor high-frequency response.	FM 25μs switch ON.	Switch should be OFF (out) except for Dolby broadcasts.

IN CASE OF DIFFICULTY

PHONO Playback only	CAUSE	REMEDY
No sound from both or one speaker.	Turntable output disconnected.	Check phono cables.
Loud hum drowns out sound.	Poor ground connection at phono-cable connections.	Check phono plugs, particularly outer-shell connections.
Low background hum.	a) Hum picked up in turntable or turntable cables. b) Turntable not grounded.	a) Keep cables away from power cords. Twist left and right cables together. b) Reverse AC plug of turntable. Connect ground wire between turn-table and GND connector.
Background buzz.	TV signal picked up by phono cable. (especially near transmitter).	Route phono cables to minimize buzz.
Howling noise at maximum volume settings.	Acoustic pickup from speaker.	Increase distance between speaker and turntable. Choose speaker locations carefully. Check turntable suspension.

BLOCK DIAGRAM



SPECIFICATIONS

AMPLIFIER SECTION

Power Output

80 watts* per channel, minimum RMS, both channels driven at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.02% total harmonic distortion.

Both Channels Driven	
into 8Ω at 1,000 Hz	85W + 85W
into 4Ω at 1,000 Hz	100W + 100W
Dynamic Power Output	360W at 4Ω
Total Harmonic Distortion	
(20 Hz to 20,000 Hz from AUX)	
rated power into 8Ω	0.02%
1W power into 8Ω	0.007%
Intermoduration Distortion	
(60 Hz: 7 kHz = 4 : 1 SMPTE)	
rated power into 8Ω	0.007%
1W power into 8Ω	0.009%
Slew Rate	±200 V/μsec
Rise Time	0.9 μsec
Damping Factor	
(20 Hz – 20 kHz at 8Ω)	100
Input Sensitivity/Impedance	
Phono	2.5 mV/50 kΩ
AUX and TAPE	200 mV/50 kΩ
MIC	3.6 mV/50 kΩ
Signal to Noise Ratio	
(A weighted)	
Phono	85 dB for 2.5 mV input
	91 dB for 5.0 mV input
AUX and TAPE	108 dB for 200 mV input
MIC	72 dB for 2.2 mV input
Maximum Phono Input Level	
at 1,000 Hz	200 mV (rms), THD 0.02%
Frequency Response	
PHONO RIAA	
Standard Curve	20 Hz to 20,000 Hz ±0.2 dB
AUX and TAPE	DC to 320 kHz –3 dB
Tone Control	
Bass (at 250 Hz)	±12 dB at 50 Hz
Mid	±10 dB at 800 Hz
Treble (at 2.5 kHz)	±12 dB at 15 kHz
Loudness Control	
(VOL. –30 dB)	+10 dB at 100 Hz
Subsonic Filter	18 Hz 6 dB/oct
High Filter	5 kHz 6 dB/oct
Output Level/Impedance	
TAPE REC Out (Pin)	200 mV/300Ω
TAPE REC Out (DIN)	30 mV/80 kΩ

FM TUNER SECTION

Usable Sensitivity	10.3 dBf (1.8 μV)
50 dB Quieting Sensitivity	
Mono	16.1 dBf (3.5 μV)
Stereo	37.9 dBf (43 μV)
Signal to Noise Ratio at 65 dBf	
Mono	83 dB
Stereo	75 dB
	77 dB at 10 mV input
Total Harmonic Distortion	
Mono	0.08%
Stereo	0.09%
Frequency Response	30 Hz to 15,000 Hz +0.5, –1.0 dB
Capture Ratio	1.0 dB
Image Rejection Ratio	83 dB
Spurious Response Ratio	100 dB
IF Response Ratio	105 dB
Alternate Channel Selectivity	
WIDE	30 dB at 300 kHz
NARROW	60 dB at 300 kHz
AM Suppression Ratio	65 dB
Stereo Separation Ratio	50 dB at 1,000 Hz
	40 dB at 50 Hz to 10,000 Hz
Subcarrier Product Ratio	70 dB
Antenna Impedance	300Ω Balanced and 75Ω unbalanced
FM Frequency Range	88 MHz to 108 MHz

AM TUNER SECTION

Usable Sensitivity	10 μV (250 μV/m)
Signal to Noise Ratio	52 dB
Image Rejection	50 dB
Selectivity	50 dB

GENERAL

Power Consumption	5.3A (UL and CSA)
	600W (IEC)
	370W (rated power at 8Ω)
	45W (non signal)
AC Outlet	Switched 1, Unswitched 1
Dimensions	W: 546 mm (21-1/2")
	H: 172 mm (6-3/4")
	D: 411 mm (16-3/16")
Weight (Net)	15 kg (33 lbs)
(Gross)	17.2 kg (37.9 lbs)

* Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in U.S.A.

Note:

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

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