

KENWOOD

GRAPHIC EQUALIZER

GE-7030

INSTRUCTION MANUAL

KENWOOD CORPORATION

B60-0520-20 (K, P, E, T, M, Y) 95/12

# Introduction

Your choice of this product indicates that you are a devotee to excellence in sound reproduction.

We appreciate your patronage and take pride in the long tradition of quality components that our company represents.

So that you can get the most out of your unit, we suggest that you take the time to read through this manual before you hook up and operate your system. This will acquaint you with operating features and system-connection considerations so that your listening pleasure will be enhanced right from the start. You will notice that in all aspects of planning, engineering, styling, operating convenience and adaptability we have sought to anticipate your needs and desires.

**Keep this manual handy for future reference.**

## 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 dealer for information or service on this product.

Model \_\_\_\_\_ Serial Number \_\_\_\_\_

## Unpacking

Unpack the unit carefully and make sure that all accessories 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.

## Accessories

- Audio cord ..... 2
- AC plug ..... 1  
(U.K. only)



- AC plug adaptor..... 1  
(Except for some areas)  
For the unit with a European AC plug in areas other than Europe.



## Contents

**Caution: Read the pages marked carefully to ensure safe operation.**

Introduction .....	2	Fine adjustment of each frequency band (Graphic mode) .....	13
Before applying power .....	3	User-preset of user-created pattern .....	13
Safety precautions .....	3	Operation of genre feature .....	14
IMPORTANT SAFEGUARDS .....	4	Tape playback/recording with equalizer effect .....	15
System connections .....	6	How to play tape with equalizer effect .....	15
Controls and indicators .....	7	How to record sound with equalizer effect .....	15
Operation of graphic equalizer .....	8	Microphone mixing .....	16
Demonstration method .....	8	Functions of the graphic equalizer .....	17
Contents of display .....	9	In case of difficulty .....	18
Operation of MANUAL feature .....	10	Specifications .....	18
Operation of REFERENCE feature .....	10		
Equalizer pattern list .....	11		
Creation of desired equalizer patterns .....	12		
Adjusting curves centered around user-selected frequency ranges (Parametric mode) .....	12		

**⚠ Caution: Read this page carefully to ensure safe operation.**

## Before applying power

### For the U.S.A. and Canada

#### Important!

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only.

**CAUTION:** TO PREVENT ELECTRIC SHOCK DO NOT USE THE AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

### For the United Kingdom

#### Important!

Units shipped to the U.K. are designed for operation on 240 volts AC only.

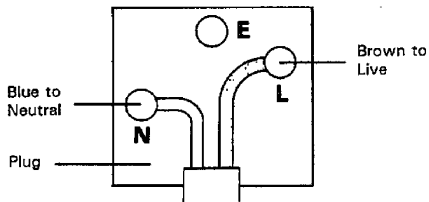
The mains plug must be removed from the wall socket prior to any internal examination.

The wires in this mains lead are coloured in accordance with the following code:

Blue ..... Neutral  
Brown ..... Live

The wires in this mains lead must be connected to the terminals in the plug as follows:

Wire colour	Plug terminal marking
Blue .....	N or Black
Brown .....	L or Red



#### Notes:

1. If a 13-amp plug is used, this must be fitted with a 13-amp fuse.
2. If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal.

### For Australia and Europe

#### Important!

Units shipped to Australia are designed for operation on 240 V AC only.

Units shipped to Europe are designed for operation on 230 V AC only.

### For other countries

#### Important!

Units shipped to countries other than the above countries 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

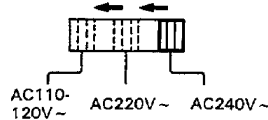
This unit operates on 110-120 or 220-240 volts AC. The AC voltage selector switch Type A or Type B on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

#### Note:

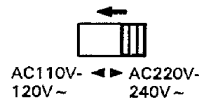
Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.

#### AC voltage selector switch

##### Type A







##### Type B



Move switch lever to match your line voltage with a small screwdriver or other pointed tool.

## Safety precautions

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

 <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>CAUTION</b>  <small>RISK OF ELECTRIC SHOCK DO NOT OPEN</small> </div> 	<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>
	<p>THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.</p>
	<p>THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.</p>

# IMPORTANT SAFEGUARDS

**⚠ Caution : Read this page carefully to ensure safe operation.**

Please read all of the safety and operating instructions before operating this unit. For best results, follow all warnings placed on the unit and adhere to the operating and use instructions. These safety and operating instructions should be retained for future reference.

**1. Power sources** — The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

**2. Power-cord protection** — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

Never pull or stretch the cord.

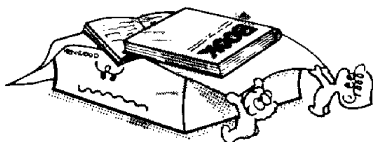


**3. Grounding or polarization** — The precautions should be taken so that the grounding or polarization means of this unit is not defeated.

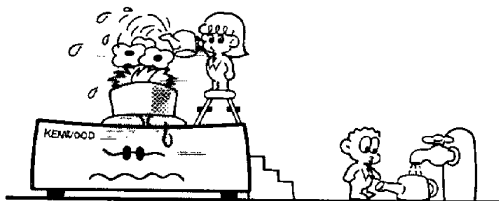
**4. Ventilation** — The unit should be situated so that its location or position does not interfere with its proper ventilation.

To maintain good ventilation, do not put records or a table-cloth on the unit. Place the unit at least 10 cm away from the walls.

Do not use the unit on a bed, sofa, rug or similar surface that may block the ventilation openings.

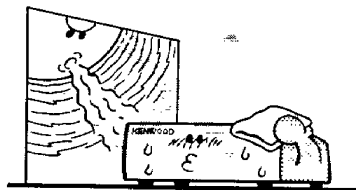


**5. Water and moisture** — The unit should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

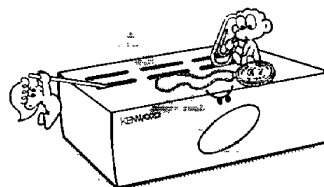


**6. Temperature** — The unit may not function properly if used at extremely low, or freezing temperatures. The ideal ambient temperature is above + 5°C (41°F).

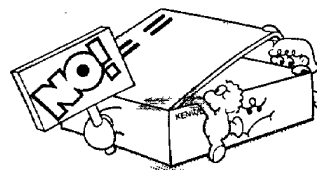
**7. Heat** — The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.



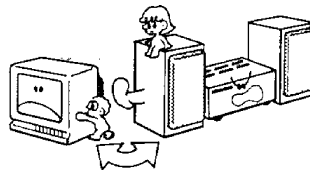
**8. Electric shock** — Care should be taken so that objects do not fall and liquid is not spilled into the enclosure through openings. If a metal object, such as a hair pin or a needle, comes into contact with the inside of this unit, a dangerous electric shock may result. For families with children, never permit children to put anything, especially metal, inside this unit.



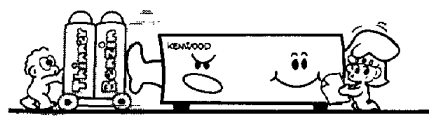
**9. Enclosure removal** — Never remove the enclosure. If the internal parts are touched accidentally, a serious electric shock might occur.



**10. Magnetic fields** — Keep the unit away from sources of magnetic fields such as TV sets, speaker systems, radios, motorized toys or magnetized objects.



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



**⚠ Caution : Read this page carefully to ensure safe operation.**

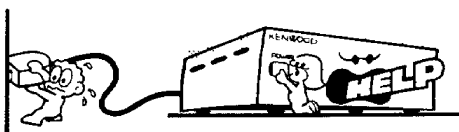
**12. Carts and stands** — An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



**13. Nonuse periods** — The power cord of the unit should be unplugged from the outlet when left unused for a long period of time.

**14. Abnormal smell** — If an abnormal smell or smoke is detected, immediately turn the power OFF and pull out the power cord. Contact your dealer or nearest service center.

**POWER OFF!**



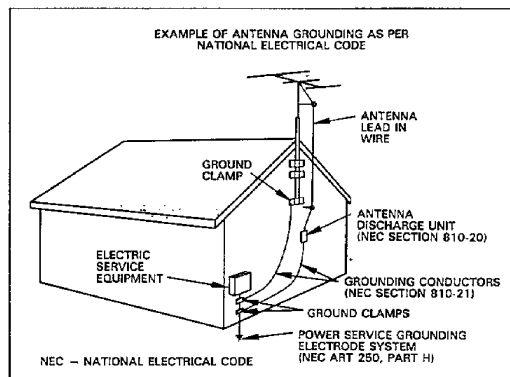
**15. Damage requiring service** — The unit should be serviced by qualified service personnel when:

- A.** The power-supply cord or the plug has been damaged; or
- B.** Objects have fallen, or liquid has been spilled into the unit; or
- C.** The unit has been exposed to rain; or
- D.** The unit does not appear to operate normally or exhibits a marked change in performance; or
- E.** The unit has been dropped, or the enclosure damaged.

**16. Servicing** — The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

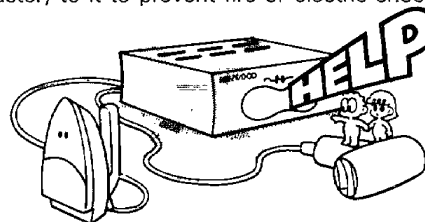
**17. Outdoor antenna grounding** — If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/ NFPA No. 70—1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding con-

ductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure.



**18. Power lines** — An outdoor antenna should be located away from power lines.

**19. AC outlets** — Do not connect other audio equipment with a power consumption larger than that specified to the AC outlet on the rear panel. Never connect other electrical units, such as an iron or toaster, to it to prevent fire or electric shock.



**Notes:**

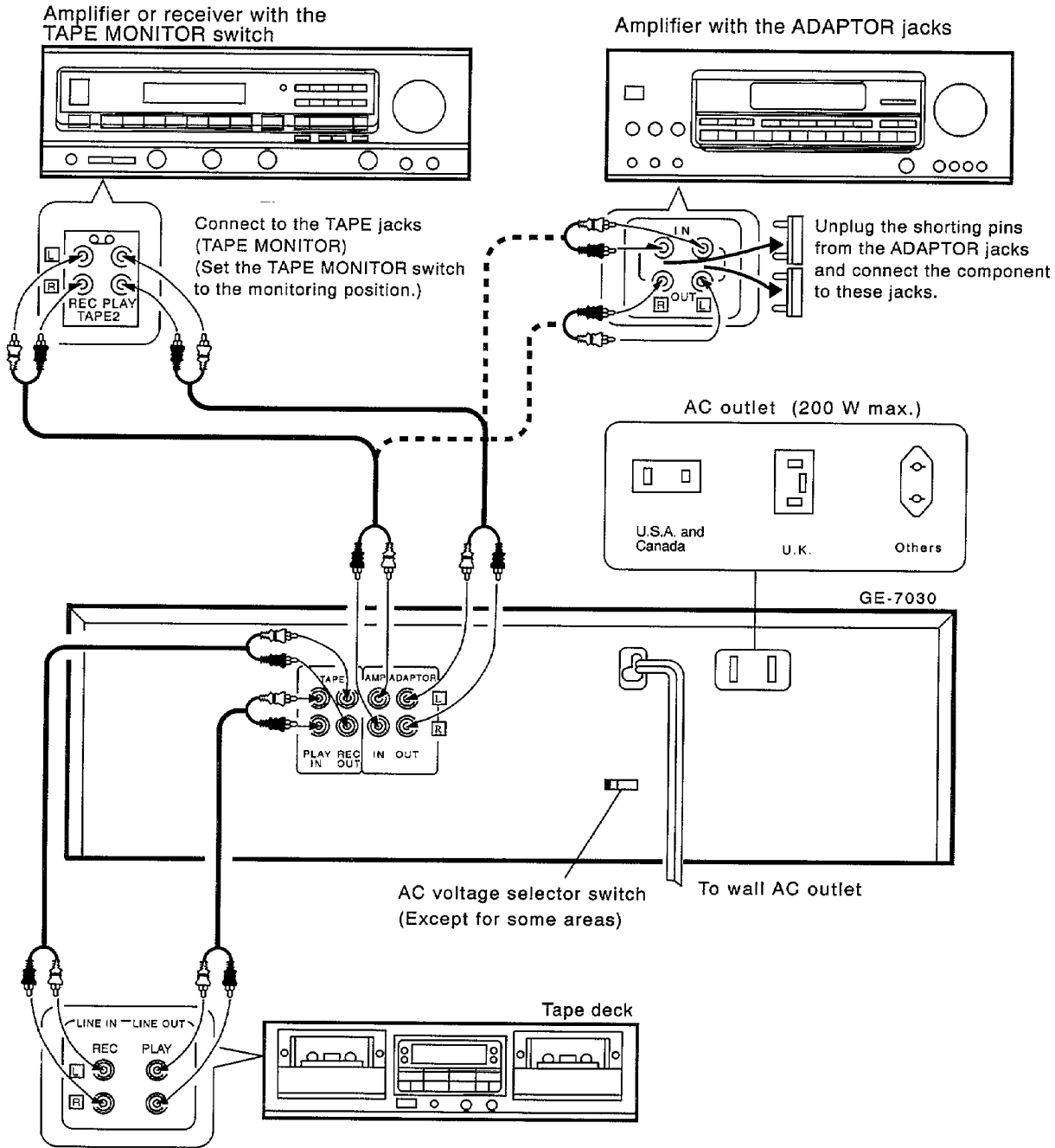
- 1. Item 3 is not required except for grounded or polarized equipment.
- 2. Item 17 and 18 are not required except for units provided with antenna terminals.
- 3. Item 17 complies with UL in the U.S.A.

# System connections

Make connection as shown below. When connecting the related system components, refer also to the instruction manuals of the related components.

Do not plug in the power lead until all connections are completed.

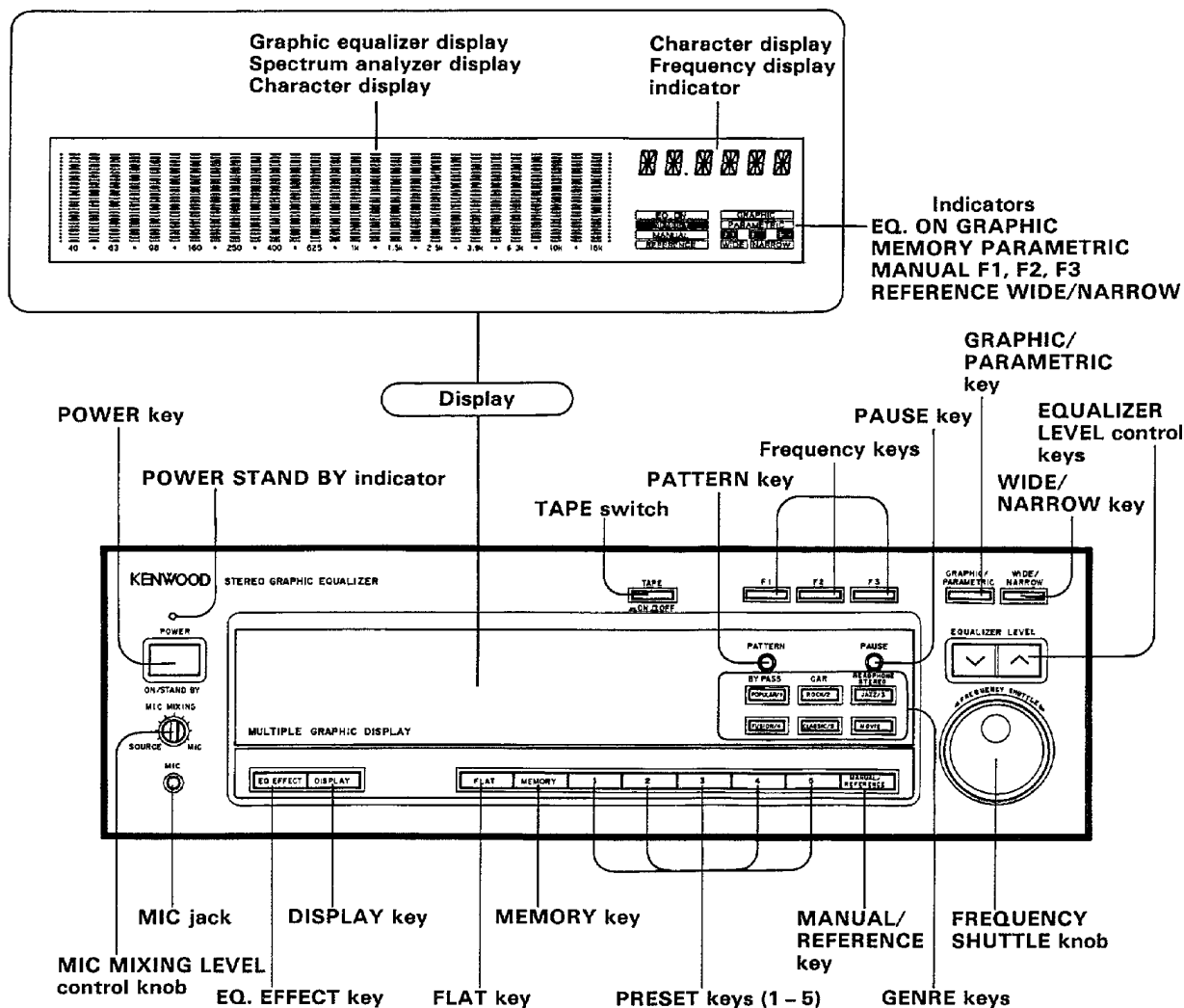
This unit can be connected to the amplifier or receiver having the following jacks.



**Notes:**

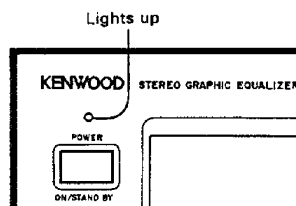
1. Connect all cords firmly. If connections are loose there could be loss of sound or noise produced.
2. When plugging and unplugging connection cords, be sure to first remove the power cord from the AC outlet. Plugging/unplugging connection cords without removal of the power cord can cause malfunctions or damage on the unit.
3. Do not connect up a power source which is larger than that indicated on the socket at the rear of the unit.

# Controls and indicators



## STAND BY mode of POWER switch

When the power cord of this system is plugged into an AC outlet, the STAND BY indicator lights up regardless of the ON/OFF setting of the POWER switch. This indicates that a small amount of current is being supplied to the unit to back up the memory contents. This mode is referred to as the Stand By mode.



# Operation of graphic equalizer

This unit incorporates a graphic equalizer with 27-band display. By fine-adjusting the frequency band (14 points), it is possible to compensate for the acoustics of the listening room, as well as to enjoy music with optimum sound as described below.

## 1. MANUAL/REFERENCE modes

**MANUAL:** Five preset patterns have been factory-preset for this mode, too.

In this mode, it is also possible to preset (assign) equalizer patterns created by the user in place of the factory presets.

**REFERENCE:** Five exemplary patterns have been preset at the factory.

## 2. GRAPHIC/PARAMETRIC modes

**GRAPHIC:** The equalizer curve can be adjusted in a detailed way for every frequency range. It is also possible to fine-adjust a curve which has been created in the PARAMETRIC mode. The GRAPHIC mode is to be used when detailed adjustment of acoustic compensation is required.

**PARAMETRIC:** The equalizer curve can be adjusted in a simplified manner based on the low-, medium- and high-frequency ranges.

## 3. GENRE mode

A total of 30 playback patterns have been factory-preset by combining five recommended equalizer patterns with six music genres, so that any of them can be selected by actually comparing them. Similarly, selection from 30 types of recording patterns for playback on car stereo or from 30 types of recording patterns for playback on headphone stereo is also available.

Select the optimum equalizer pattern according to the music genre and purpose of use of the pattern.

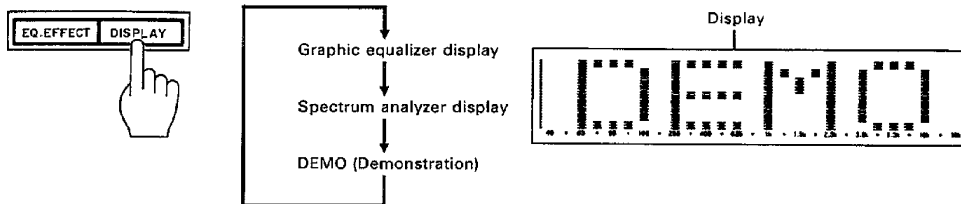
## ■ Demonstration method

For better understanding of the equalizer features described above, representative pattern for each feature can be displayed for your reference.

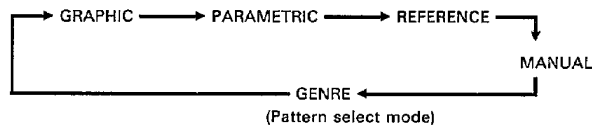
1 Play a music source.

2 Initiate the "DEMO" display.

The mode changes every time the DISPLAY key is pressed.

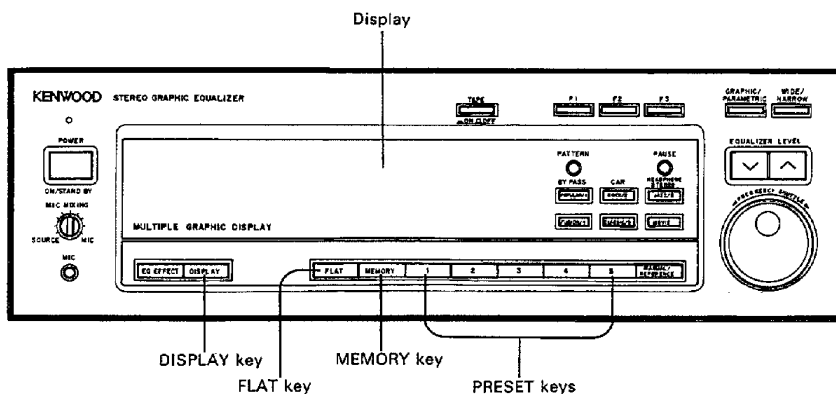


• Demonstration is performed repeatedly in the following order (about 4 minutes per cycle).



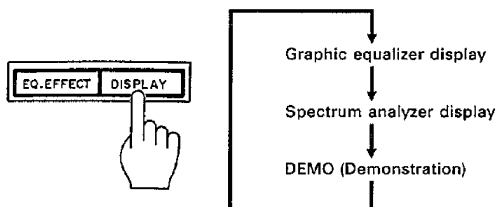
• To end the demonstration, press the DISPLAY key again.





## Contents of display

The display mode changes every time the **DISPLAY** key is pressed.

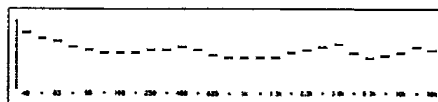


### Graphic equalizer display

Shows how each frequency range is compensated. The graphic equalizer display also appears for about 5 seconds, even while the unit is in the spectrum analyzer display mode, when one of the following operation is performed.

1. Switching power ON.
2. An operation key associated with an equalizer operation is pressed.

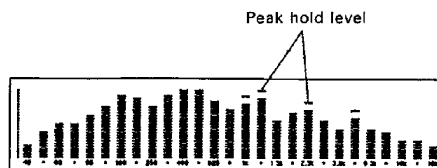
### Graphic equalizer display



### Spectrum analyzer display

Displays the frequency distribution of the source being played to allow understanding at a glance. The peak value of the varying level of each frequency range is held and displayed for about 0.5 second.

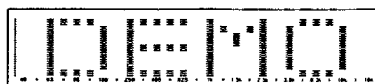
### Spectrum analyzer display

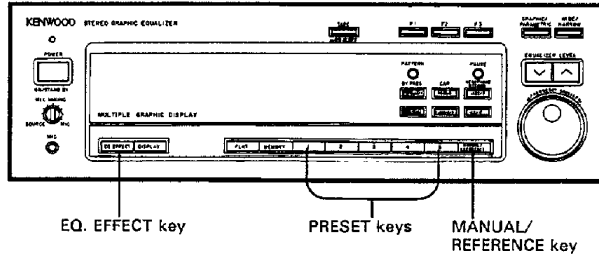


### Character display

Regardless of the DISPLAY key setting, guidance in English is displayed according to the operations performed.

Example: DEMO, GENRE, USE...etc.





■ Operation of MANUAL feature

■ Operation of REFERENCE feature

**1** Play a music source.

**2** Select the EQ.ON mode.

**3** Set to MANUAL.

**4** Select an equalizer pattern.

**1** Play a music source.

**2** Select the EQ.ON mode.

**3** Set to REFERENCE.

**4** Select an equalizer pattern.

**To cancel the equalizer effect:**

EQ.ON indicator goes off.

- The pattern being displayed remains the same.

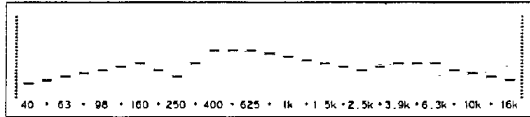
**Flat key**

- Pressing the FLAT key makes the displayed curve flat. This occurs in any mode.

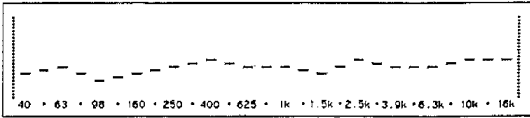
## Equalizer pattern list

### Preset equalizer pattern R1 to R5 (REFERENCE)

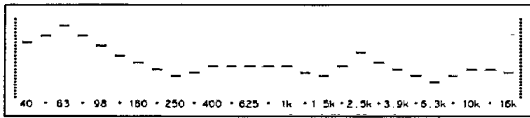
**R1: [Mild]** For listening a mild sound comfortable for ears, like back ground music.



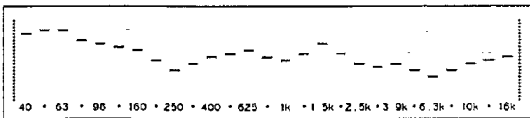
**R2: [Clear]** For listening a brilliant sound with attenuated low frequencies.



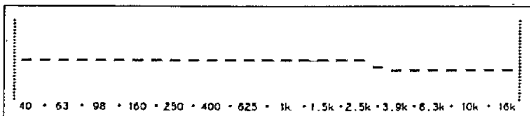
**R3: [Heavy]** For listening music like rock and fusion with more powerful sound.



**R4: [Scale]** For listening more exciting sound.



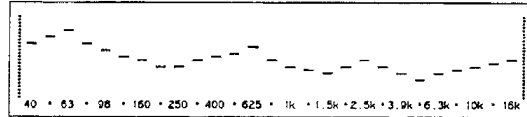
**R5: [Noise reduction for recording]** Cut off stimulating medium and high frequencies and enables softsound recording.



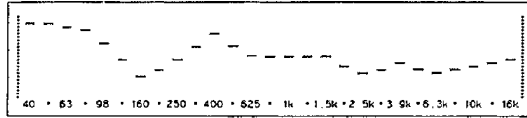
### Preset equalizer pattern M1 to M5 (MANUAL)

Patterns can be created and preset by the user in this mode.

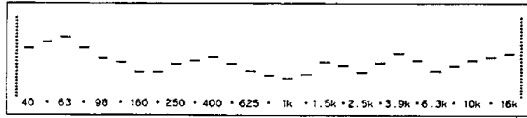
**M1: [Bass intensity]** For listening a bass sound effect without feeling of sharpness.



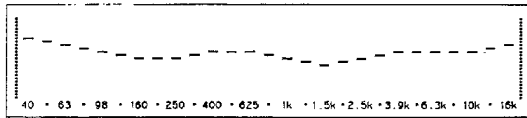
**M2: [Vocal]** For listening vocal sound with enhanced expansion.



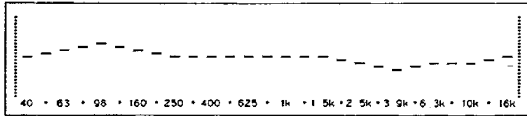
**M3: [Percussion]** For listening percussion sound with expansion and powerfulness.



**M4: [Car]** For recording tape with suitable tone to be played on car stereo.



**M5: [Headphones]** For recording tape with suitable tone to be played on headphone stereo.



● When pattern M1, M2 or M3 is used, set the SURROUND key of the amplifier to ON.


# Creation of desired equalizer patterns

**PARAMETRIC:** This mode allows to create a curve for up to three ranges centered around the user-selected frequencies in the low-, medium- and high-frequency ranges. The inclination of each curve can be selected between **WIDE** (gentle slope) and **NARROW** (steep).

**GRAPHIC:** This mode allows to adjust the equalizer curve for each frequency band provided. The curve created in the parameter mode can be fine-adjusted in this mode.

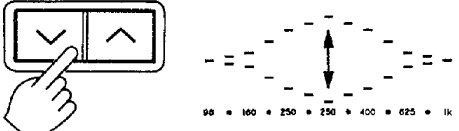
## ■ Adjusting curves centered around user-selected frequency ranges (Parametric mode)

**1** Select the EQ.ON mode.



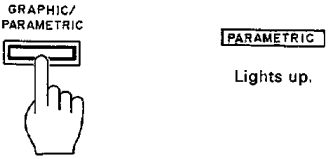
Lights up.

**5** Adjust the level.



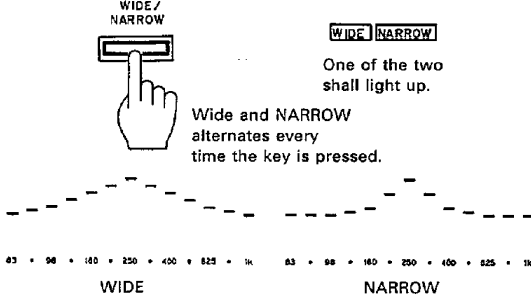
- Pressing the **FLAT** key allows to start adjustment from the flat level position.

**2** Select the parametric mode.



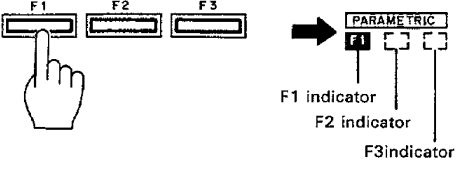
Lights up.

**6** Select the inclination of the curve.

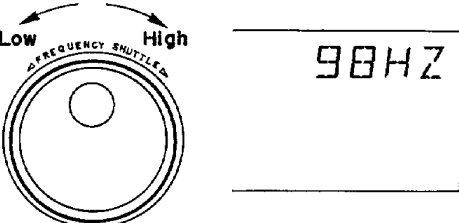


- One adjusted, the curve remains the same until next time it is pressed.

**3** Select the frequency range.

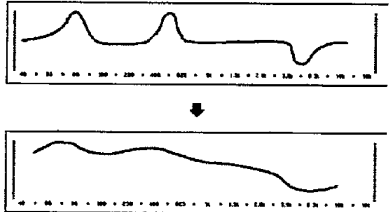


**4** Select the center frequency.

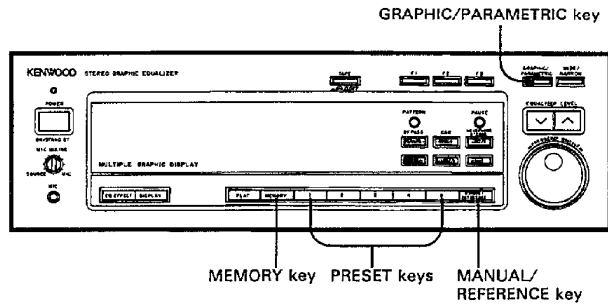


**7** When the adjustments of ranges F2 and/or F3 are also required, repeat steps 3 to 6 for each of them.

- When two or three curves have been set, the overall curve obtained by combining them is displayed in a few seconds.



- For finer adjustment, perform the graphic mode operation described in the following page.



## ■ Fine adjustment of each frequency band(Graphic mode)

## ■ User-preset of user-created pattern

- 1** Select the EQ.ON mode.
- 2** Select the graphic mode.
- 3** Select the frequency band to be adjusted.
- 4** Adjust its level.
- 5** For each frequency band to be adjusted, repeat steps 3 and 4 above .

- 1** Create a desired equalizer pattern.  
Any equalizer pattern can be preset if it is being displayed.
- 2** Preset the equalizer pattern.

  - ① Press the MEMORY key.
  - ② Press one of the preset keys.

Press while MEMORY is lighted up.

    - Pattern is preset under the number of the numeric key pressed.
    - Up to five patterns can be preset in the same manner.
    - When a pattern has previously been preset under the numeric key pressed, the newly preset pattern replaces the previous pattern.

To return to the initial pattern(factory-preset patterns M1 to M5 on page 11) by clearing the user preset pattern:

Press the preset key where the pattern to be cleared is preset for more than 5 seconds .

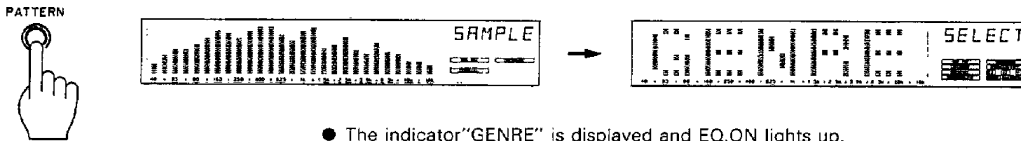
Note:  
If the mode is switched from "Graphic" to "Parametric", the equalizer pattern created in the Graphic mode is cleared.

## ■ Operation of genre feature

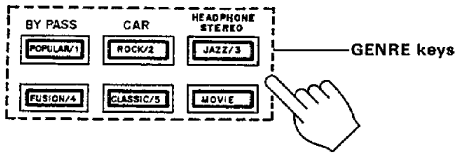
Through selections of the music genre, tone pattern and purpose of use in three steps, this feature allows to obtain the optimum playback pattern from the 90 equalizer patterns (6 genres × 5 patterns × 3 purposes of use=90).

**1** Play a music source.

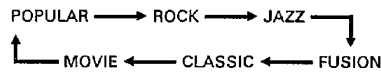
**2** Initiate the genre mode.



**3** Select the genre of music.

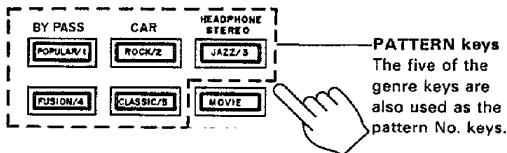


Until you actually select the music genre, patterns of the genres are displayed in repeated cycles (7 seconds) and the tones heard also change accordingly.

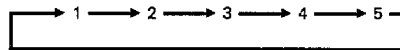


If the PAUSE key is pressed in step 3 or 4, the repetition of equalizer patterns stop so that you can check the tone of a specific pattern more in details. The repetitions resume when the PAUSE key is pressed again.

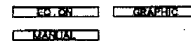
**4** Select the desired tone pattern.



Until you actually select a tone pattern, the five patterns available with the genre selected in step 3 are displayed in repeated cycles and the tones head also change accordingly. Five of the genre keys are also used as pattern No.keys.

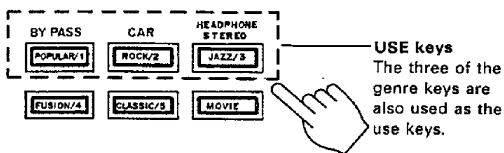


The genre selected — JAZZ — The number of the tone pattern



● After the tone pattern has been selected, characters "USE" appears on the display.

**5** Select the purpose of use of the pattern.

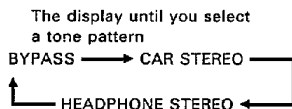


**Major purposes of use provided by the USE keys.**

BYPASS key : For use in normal playback and recording.  
CAR key : For use in recording of tapes to be played on car stereos.

HEADPHONE STEREO key : For use in recording of tapes to be played on headphone stereo players.

For the CAR or HEADPHONE STEREO use, a special curve for use in recording is combined and displayed. For the procedure of recording sound with equalizer effect, refer to page 15.



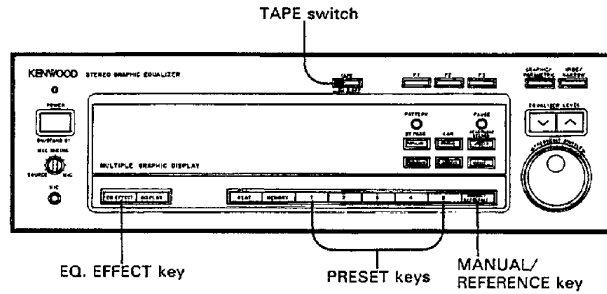
**To cancel genre mode**

Press the key again.



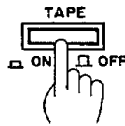
# Tape playback/recording with equalizer effect

Preparation: Before proceeding to the following, connect a tape deck as shown on page 6.

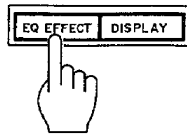


## ■ How to play tape with equalizer effect

1 Set the TAPE switch to ON (ON).



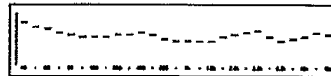
2 Select the EQ.ON mode.



Lights up. → EQ.ON

3 Create a desired equalizer pattern.

• Refer to page 10 - 14.

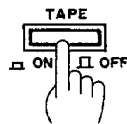


4 Start playing the tape deck.

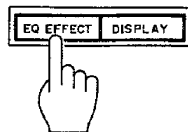
## ■ How to record sound with equalizer effect

In addition to ordinary recording, special equalizer recording patterns (refer to page 11) can be used for effective playback on car stereo or headphone stereo.

1 Set the TAPE switch to OFF (OFF).



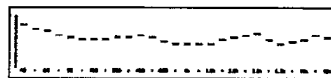
2 Select the EQ.ON mode.



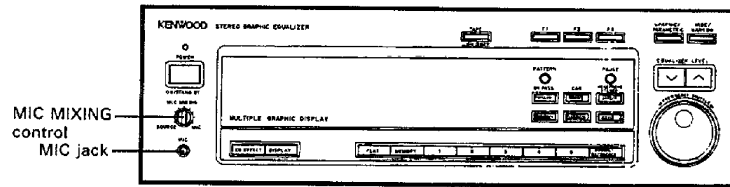
Lights up. → EQ.ON

3 Create a desired equalizer pattern.

• Refer to page 10 - 14.



4 Start recording on the tape deck.



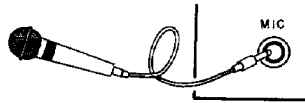
## ■ Microphone mixing

The microphone mixing function of this unit allows to talk or sing along with the source sound (broadcast, tape, CD, analog disc).

- 1 Set the MIC MIXING control to the SOURCE position.



- 2 Insert the microphone plug into the MIC jack.



- 3 Adjust the volume balance between the microphone and source sound.



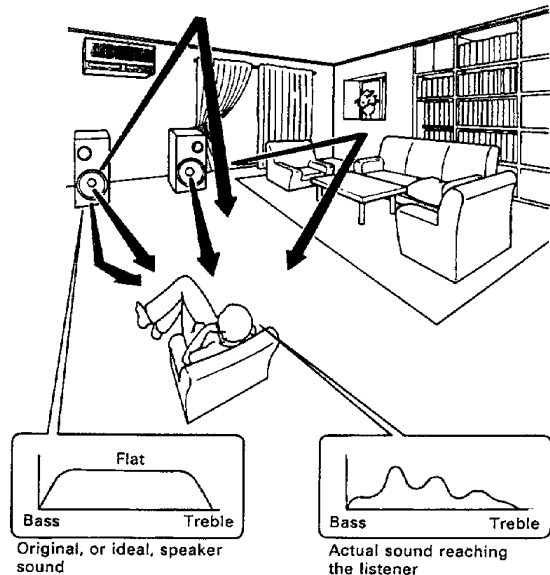
Note:

When the microphone is not to be used, set the MIC MIXING control to the "SOURCE" position.



# Functions of the graphic equalizer

## ■ Functions of graphic equalizer



### Compensation for the audio characteristics of the listening room

The listening room may contain several objects. Some of them reflect sound and some absorb sound, thus the sound reaching your ears is considerably affected by these objects.

In such cases, the graphic equalizer can be used to adjust the frequency response of the room for a flat response from low to high frequencies.

- Low frequencies are absorbed by beds, chairs, etc.
- High frequencies are absorbed by curtains, screens, etc.
- The room structure can cause the low frequencies to be unclear, or the sound level to increase or decrease depending on the frequency.

### Adjustment of sound to your individual taste

When the reproduced sound contains several musical instruments and voices, the graphic equalizer allows you to enhance or attenuate the sound of specific instruments or voices.

## ■ Sound equalization

### ● Super bass range (40 Hz ~ 63 Hz)

When this control is moved up, the bass instrument (double bass, bass drums, or pipe organ, etc.) sound is increased.

When the super bass sound is boomy, move this control down.

### ● Bass range (98 Hz ~ 160 Hz)

Usually, the listening room resonance frequency is in this range. To eliminate bass resonance, move this control down.

### ● Mid-bass range (250 Hz ~ 400 Hz)

This range is the basis of music. Whether the sound is rich or not, depends on this range. When the playback sound is not so good, move this control up.

### ● Mid range (625 Hz ~ 1 kHz)

When this control is moved up or down, the baritone or soprano voice is emphasized/de-emphasized. This range is related to the "presence" of music.

### ● Mid-high range (1.5 kHz ~ 2.5 kHz)

This range is related to stimulus and metallic sound. When this range is well compensated, vivid sound can be obtained.

### ● High range (3.9 kHz ~ 6.3 kHz)

This frequency range is related to the hardness of the sound. When this control is moved up, strings or brass instruments, such as flutes or piccolos, are emphasized. When the control is moved down, the sound will be more soothing.

### ● Super high range (10 kHz ~ 16 kHz)

This frequency range is related to the details of the music. When this control is moved up, super high frequency instruments, such as triangles or cymbals, are emphasized, resulting in wide sound and echoes.

## In case of difficulty

**⚠ Caution : Read this page carefully to ensure safe operation.**

What appears to be a malfunction may not always be serious. If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or service representative.

Symptom	Cause	Remedy
Power fails to turn on.	<ul style="list-style-type: none"> <li>● Poor connection of the power cord plug.</li> <li>● The power cord plug is connected to the SWITCHED outlet of the amplifier, and the power switch is turned off.</li> </ul>	<ul style="list-style-type: none"> <li>● Connect the power cord plug securely.</li> <li>● Turn on the power switch of the amplifier.</li> </ul>
No equalizer.	<ul style="list-style-type: none"> <li>● The input and output connections are reversed.</li> </ul>	<ul style="list-style-type: none"> <li>● Connect the input and output correctly.</li> </ul>

### Notes:

1. This system is microprocessor-controlled, so malfunction may occur due to external noise or interference noise. In such a case, unplug the power cord, plug it and power on again.
2. Do not use contact cleaners because it could cause a malfunction. Be specially careful against contact cleaners containing oil, for they may deform the plastic components.

## Specifications

### Performance

Equalizer characteristic variable range .....	± 12 dB
Individual channel adjust .....	40 Hz, 63 Hz, 98 Hz, 160 Hz, 250 Hz, 400 Hz, 625 Hz, 1 kHz, 1.5 kHz, 2.5 kHz, 3.9 kHz, 6.3 kHz, 10 kHz, 16 kHz
Total harmonic distortion (at 1 kHz, Flat) .....	0.006 %
Gain .....	0 dB
Frequency response .....	10 Hz to 70 kHz, ±3 dB
Signal to noise ratio (IHF '66) .....	100 dB
Input impedance .....	47 kΩ
Maximum output voltage (at 1% T.H.D.).....	9 V
Output Impedance .....	2.2 kΩ

### General

Power consumption .....	18 W
AC outlets	
For the U.S.A. and Canada	
UNSWITCHED .....	1 (200W, 1.6A max.)
For other countries	
UNSWITCHED .....	1 (200W max.)
Dimensions .....	W: 440 mm (17-5/16") H: 148 mm (5-13/16") D: 376 mm (14-13/16")
Weight (net) .....	5.1 kg (11.2 lb)

### Note:

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

**Note:**

The unit's power supply is secondarily connected. Note following.

The unit is not completely disconnected from the mains as long as the power cord is connected to a wall outlet.

**Observera:**

Apparatens strömförsörjning kopplas från sekundärt. V. g. ge akt på följande.

Apparaten frånkopplas inte helt och hållet från strömnätet medan apparatens nätsladd är ansluten till växelströmsuttaget.

**Huom:**

Virta yksikköön on kytketty pois sekundaaripuolelta. Huomioi seuraava.

Tämä yksikkö ei ole kokonaan kytketty pois pää virranjaka- jasta kun pää katkaisin on liitettynä virtatiiriin.

**Bemærk:**

Strømmen til apparatet afbrydes på den sekundære side. Vær opmærksom på følgende.

Denne enhed er ikke fullstendig koblet fra lysnettet så længe stikket er tilsluttet stikkontakten.

**Anmerkning:**

Strømmen til apparatet er slått av på sekundærsiden. Vær oppmerksom på det følgende.

Dette apparatet koples ikke fullstendig fra nettet så lenge støpselet står i en stikkontakt, selv om strømbryteren settes i av-stilling.

**For the U.S.A.  
FCC WARNING:**

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

**NOTE:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment may cause harmful interference to radio communications, if it is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**For CANADA  
DOC REGULATION**

"THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS AS SET OUT IN THE RADIO INTERFERENCE REGULATIONS OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS."

KENWOOD