

harman/kardon
DIGITAL SYNTHESIZED
QUARTZ-LOCKED
STEREO RECEIVER

K490

owner's manual

harman/kardon kx 490

DIGITAL SYNTHESIZED QUARTZ-LOCKED STEREO RECEIVER

TAPE MONITOR
Tape 1

photo
aux/CD

FUNCTION
fm

FM 95.50 MHz

FM/AM
SIGNAL STRENGTH
TUNED STEREO



SPECIFICATIONS

Congratulations on your choice of the Harman Kardon hk490i Digital Synthesized Quartz-locked Stereo Receiver.

In order to appreciate the full performance of this sophisticated unit, please be sure to read this owner's manual and use your receiver only in accordance with its instructions. Keep it in safe place for future reference.

Audio Section

Power Output, RMS (both channel driven into 8 Ohms, 20Hz–20kHz)	: 30 watts per channel @ less than 0.08% THD
HCC (high instantaneous current capability)	: 18A
Power Bandwidth (at half rated output into 8 Ohms)	: < 10Hz – 100,000Hz
Frequency Response (+0, –3dB)	: 0.2Hz – 150,000Hz
Signal to Noise Ratio, IHF-A WTD	
Phono	: 80dB
Aux/DAD	: 83dB
Input Sensitivity/Impedance	
Phono	: 2.2mV/47k Ohms and 125pF
Aux/DAD	: 135mV/22k Ohms
Tone Control Characteristics	
Bass at 50Hz, Boost/Cut	: 10dB/–10dB
Treble at 10kHz, Boost/Cut	: 10dB/–10dB
Loudness Control at 50Hz/ at 10kHz	: +10dB/+3dB
Filter	
Subsonic	: 15Hz, 6dB/Octave
High Cut	: 6kHz, 6dB/Octave

Tuner Section

Usable FM Sensitivity (Mono)	: 10.8dBf (0.95 μ V-75 Ohms)
50dB Quieting Sensitivity	
Mono	: 15.6dBf (1.65 μ V-75 Ohms)
Stereo	: 36.6dBf (18.5 μ V-75 Ohms)
Alternate Channel Selectivity	: 70dB
Stereo Separation (1kHz)	: 50dB
FM THD (1kHz, 100% modulation)	
Mono/Stereo	: 0.08%/0.12%
AM Sensitivity (external antenna)	: 15 μ V

General

Dimensions (W x H x D) (with legs, knobs, antenna)	: 17-7/16" x 5-1/4" x 14-3/8" (443 x 134 x 365 mm)
Weight	: 17lbs. 10oz. (8kg)
Power Supply	: AC 120V, 60Hz
Power Consumption	: 200W



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



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.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user of 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.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

■ High Instantaneous Current Capability (HCC)

The power amplifier is capable of driving as much as 18 amperes of instantaneous signal current into a low impedance or reactive speaker load. This maintains the hk490i's high degree of sound quality even at high power levels.

■ Low Negative Feedback

Negative feedback is kept to a minimum in the phono, preamplifier and power amplifier sections. This provides exceptional transient response and low dynamic distortion.

■ Ultrawideband Response

In order to maintain phase linearity, the frequency response of this unit greatly exceeds the audio range a both the upper and lower limits.

■ Exceptional FM Audio Sound Quality

In addition to high sensitivity and excellent interference rejection, the tuner section was designed to provide low distortion, low noise and wide stereo separation.

■ Digital Synthesized Quartz-locked Tuning

Quartz-locked tuning accuracy eliminates drifting and mistuning, thereby guarantying optimum sound quality. Eight AM and eight FM stations can be simultaneously stored in the memory. They will remain for three weeks even if there is a loss of power.

■ Constructed for Audio Purity

The internal wiring, layout and materials have been chosen to minimize noise, hum and interaction of the various circuits.

Always Use at 120V AC

This unit is designed for operation with 120V AC. Use only domestic AC outlets. Never connect the unit to an outlet supplying a higher voltage. This may create a fire hazard.

Handle the Power Cord Gently

- Do not disconnect the plug from the AC outlet by pulling the cord; always pull the plug itself. Pulling the cord may break the wire.
- If you do not intend to use your unit for any considerable length of time, disconnect the plug from the AC outlet.
- Do not place furniture or other heavy objects on the cord, and try to avoid dropping heavy objects on it. Also do not make a knot. Not only may the cord be damaged, it can also cause short circuits with a consequent fire hazard.

Place of Installation

Place your unit on a firm and level surface. Avoid installing your unit under the following conditions:

- ▶ Moist or humid places.
- ▶ Places exposed to direct sunlight or close to heating equipment.
- ▶ Extremely cold locations such as those in the direct draught from an air conditioner.
- ▶ Places subject to excessive vibration or dust.
- ▶ Poorly ventilated places.

Do not cover the ventilation slots on the top of the unit. This will cause the temperature inside the unit to rise, which can eventually effect the reliability of your unit.

Before Connection

While you are connecting your receiver to the rest of your high fidelity system, please unplug the power cord, from the AC outlet. This will also disconnect all of the components plugged into its convenience receptacles.

Moving the Unit

Before moving the unit, be sure to unplug the power cord from the AC outlet and disconnect the interconnection cords to other units.

Do Not Open the Cabinet

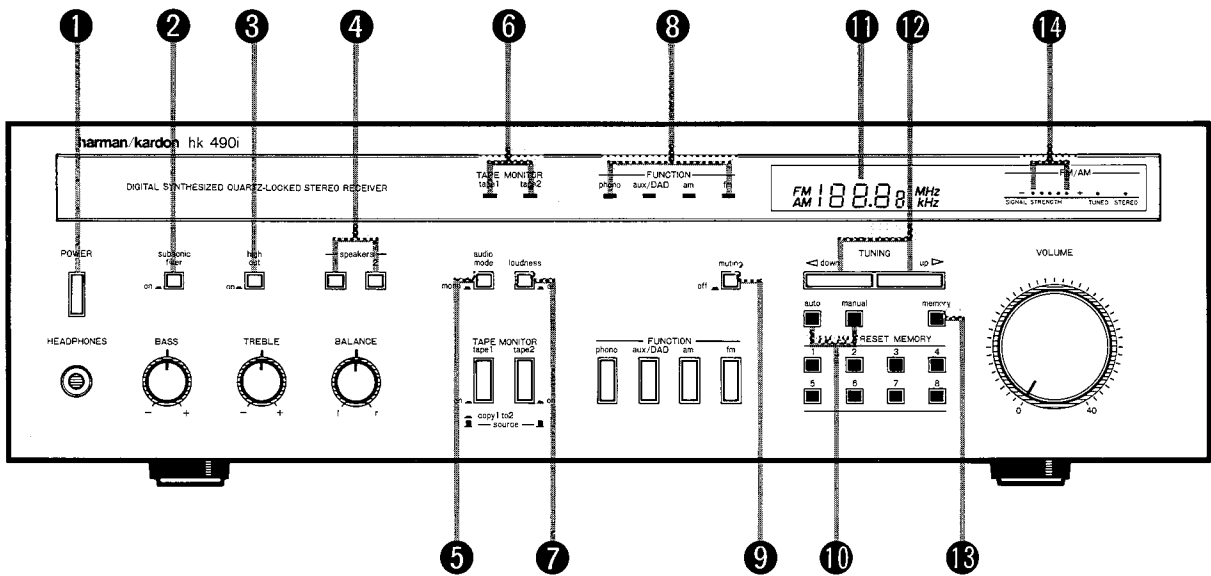
To prevent fire or shock hazard, do not tamper with internal components for inspection or maintenance. Harman Kardon does not guarantee against performance degradation resulting from any modification.

If water, a hairpin or wire accidentally enters the unit, immediately unplug the power cord from the AC outlet to prevent shock and consult an authorized Harman Kardon service station. If you use the unit under this condition, it may cause a fire or shock hazard.

Cleaning

When the unit gets dirty, wipe it with a soft dry cloth. If necessary, wipe it with a soft cloth soaked with mild soapy water and then wipe with a dry cloth.

Never use benzine, thinner, alcohol or other volatile agent, and avoid spraying an insecticide near the unit.



1 POWER SWITCH (POWER)

After the power cord has been plugged into an AC outlet, pressing this switch will turn on the power and the indication panel will illuminate. Press the switch again to turn the power off.

2 SUBSONIC FILTER SWITCH (subsonic filter)

When playing the turntable, this filter switch is used to cut off super-low tones, which excessively vibrate the cone of the speaker.

3 HIGH CUT FILTER SWITCH (high cut)

The high cut filter is used to reduce high frequency noise such as disc scratches or tape hiss.

4 SPEAKER SELECTORS (speakers)

One or two speaker systems can be connected to this unit. Press down the selector switch 1 or 2 corresponding to the system you want to listen to. To use both speaker systems, press down both switches. Press down the switches once again if the use of the speaker system is not desired.

5 AUDIO MODE SELECTOR (audio mode)

This selector is used to combine the left and right channel music signals. Usually it is set in the stereo position (button out). If the FM stereo broadcasting station you are listening to is weak and there is a lot of noise, set this switch to "mono." The two channels are combined into a monaural signal, but the noise is reduced for more comfortable listening.

6 TAPE MONITOR INDICATOR (TAPE MONITOR)

This indicator illuminates when the TAPE MONITOR selector (tape 1 or tape 2) is pressed.

7 LOUDNESS SWITCH (loudness)

This switch engages a feature which creates a more natural sound reproduction when listening at a low volume by boosting the low and high frequency ranges.

8 FUNCTION INDICATORS (FUNCTION)

Each FUNCTION indicator illuminates corresponding to the setting of the FUNCTION selector switch.

9 MUTING SWITCH (muting)

This switch eliminates irritating interstation noise when scanning for a station. To tune to a weak station, press this switch down to inactivate the muting function. This muting switch is used for both FM and AM reception.

The muting level can be controlled by the FM muting level adjusting control (MUTE ADJ.) on the rear panel. Turn it clockwise to increase or counterclockwise to decrease the muting level.

10 TUNING MODE SELECTOR (auto/manual)

Either an auto or manual tuning mode can be selected. When the AUTO button is pressed, the button illuminates in green and an automatic selection can be made. When the MANUAL button is pressed, the button illuminates in green and tuning is made manually.

11 STATION DISPLAY

This display indicates the band and frequency of the tuned station.

12 TUNING BUTTONS (TUNING)

These buttons are used for tuning to the desired broadcast station.

down : When this button is pressed, the frequency will change to a lower frequency.

up : When this button is pressed, the frequency will change to a higher frequency.

When the button is pressed continuously, the broadcast station is not tuned even when it is received. To tune the frequency rapidly, press the button continuously until close to the desired frequency then fine tune.

By setting the frequency step selector on the bottom panel, tuning can be performed by steps of either 50 kHz or 100 kHz for FM, 9 kHz or 10 kHz for AM. The United States broadcasting system uses 10 kHz steps for AM.

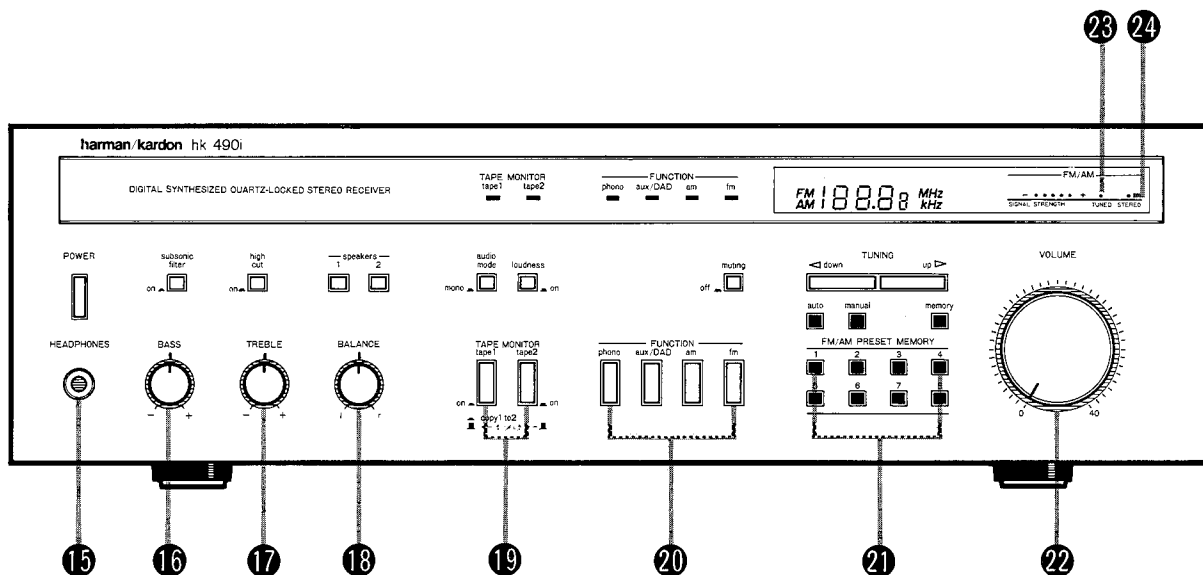
13 MEMORY SWITCH (memory)

This switch is used to enter or change the preset broadcast stations. When this switch is pressed, the switch illuminates in green for about 10 seconds which indicates the preset memory standby state.

NOTE: If you do not press the PRESET MEMORY button while the MEMORY switch is illuminated, memory pre-setting can not be made.

14 SIGNAL STRENGTH INDICATOR (SIGNAL STRENGTH)

The receiving signal levels are indicated. The stronger the selected station, the higher a level is displayed. Adjust the TUNING buttons and antenna position for the highest possible indication.



15 HEADPHONE JACK (HEADPHONES)

The output signal is always supplied to this jack. When both **SPEAKER** selectors (1 and 2) are in the OFF position (buttons out), sound will only be obtained via the headphone jack.

16 BASS CONTROL KNOB (BASS)

This knob controls the low frequency sounds. Turn it clockwise to boost or counterclockwise to cut them.

17 TREBLE CONTROL (TREBLE)

This knob controls the high frequency sounds. Turn it clockwise to boost or counterclockwise to cut them.

18 BALANCE CONTROL KNOB (BALANCE)

This knob is used to balance the left and the right channels. Usually, it is set at the center. Turn it to the left or right to balance the sound if it comes unbalanced from the speakers or the headphones.

19 TAPE MONITOR SELECTOR (TAPE MONITOR)

This switch is used for reproducing sounds with a tape or monitoring the sound during recording. The **TAPE MONITOR** indicator (tape 1 or tape 2) lights up red corresponding to the switch when it is pressed down.

tape 1: Press this switch to play the tape or monitor the sound during recording of the tape deck connected to the tape 1 terminals on the rear panel. This switch is also used for recording from tape deck 1 to tape deck 2 (tape dubbing), when two tape decks are used.

tape 2: Press this switch to play the tape or monitor the sound during recording of the tape deck connected to the tape 2 terminals on the rear panel.

To listen to a program source other than the tape, press the **TAPE MONITOR** selector (tape 1 or tape 2) again and set it to **SOURCE** (out) position (**TAPE MONITOR** indicator goes out).

NOTE: While the **TAPE MONITOR** indicator is lit up, you cannot listen to the other program sources. If both **TAPE MONITOR** selectors (tape 1 and tape 2) are pressed, priority is given for the sound from **TAPE 2**.

20 FUNCTION SELECTOR (FUNCTION)

These selectors are used to select a program source other than a tape deck.

phono : Press this switch to listen to a record (disc) played on the turntable.

aux/DAD : Press this switch to listen to the sound from a compact disc player or TV tuner connected to the **AUX/DAD** input terminals.

am : Press this switch to listen to an AM broadcast program.

fm : Press this switch to listen to an FM broadcast program.

21 PRESET MEMORY BUTTONS (FM/AM PRESET MEMORY)

Press any one of the eight **PRESET MEMORY** buttons while the **MEMORY** switch is pressed and illuminated in green, and the frequency indicated by the **STATION DISPLAY** is memorized at that **PRESET MEMORY** button. Each position can memorize one frequency in each the FM and AM bands, with a total capability of sixteen stations being preset in the memory. Once a station frequency is memorized, it can be recalled any time the same button is pressed. When the **PRESET MEMORY** button is pressed, it illuminates in green, indicating the button is in use.

22 VOLUME CONTROL KNOB (VOLUME)

This knob controls the sound level. Turning clockwise increases the sound volume, and turning counterclockwise decreases it. Set this knob at a minimum level before turning the power on and changing the sound source to protect the speakers from being damaged by a high sudden level.

23 TUNED INDICATOR (TUNED)

This indicator turns on when a broadcasting station is correctly tuned in. It may not light up when a weak station is tuned in.

24 STEREO INDICATOR (STEREO)

This indicator is illuminated when an FM stereo broadcasting is received.

ANTENNAS

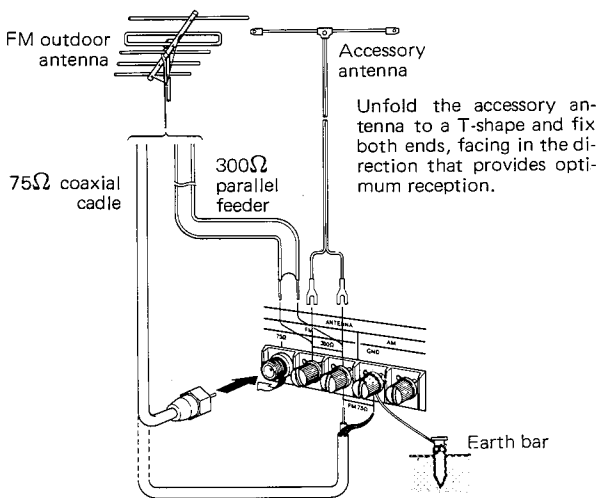
FM Antenna

If experiencing bad FM reception while using the accessory antenna, an outdoor antenna exclusively for FM reception is likely to improve FM reception.

The connecting wire between the antenna and the antenna input terminal is called a feeder. Most feeders are 300Ω parallel or 75Ω coaxial cables. We recommend type 3C-2V or 5C-2V 75Ω coaxial cable to be used for this unit. The coaxial cable has a stronger resistance against losses and interference compared with the parallel feeder.

If there is a lot of noise while receiving an FM broadcast, we recommend that you make a ground connection. Connect one end of a thick wire to the antenna GND terminal and wind the other end around an earth bar or earth plate and drive it into the ground.

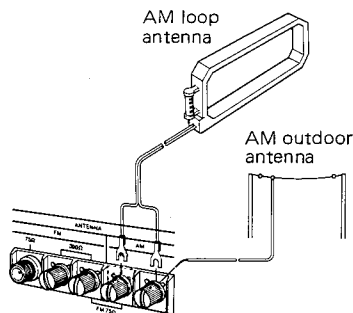
CAUTION: Never make a connection to a gas pipe because it may cause fire hazard.



AM Antenna

AM loop antenna attached to this unit allows sufficient reception except in an area where signals are weak. In a fringe area or inside a concrete building where the reception is weak and the sound is unpleasant to the ear, an AM outdoor antenna is likely to improve reception.

Place the AM loop antenna as far away from this unit as possible without touching a metal object. The AM loop antenna is fitted to this unit by an antenna holder on the rear panel. To remove the AM loop antenna from the unit, simply pull it out of the holder.

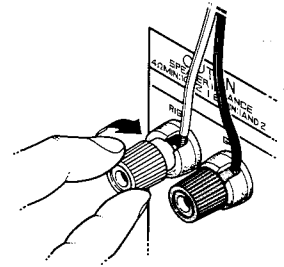


Connecting Speakers

Connect the speaker wires carefully to the speaker terminals on the rear panel so as not to mistake the left and the right channels and reverse the speaker polarities (+ and -).

Use sufficiently thick wire (18 gauge for short lengths, 16–12 gauge for longer lengths). It is recommended to use color-coded wire for easy discrimination of polarities. Speaker wires should be as short as possible, and the left and the right channel wires should have the same length.

1. Remove about 3/4 inch (20 mm) of insulation from the end of each wire and twist the strands of each conductor.
2. After making sure of correct channel and polarity, loosen the speaker terminal knob and insert the conductor straight into the recess at the upper-right of the terminal. Tighten the terminal knob, and the end of speaker wire is wound automatically.



CAUTION: Two speaker systems can be connected to this unit. The minimum speaker impedance should be 4Ω when only one speaker system is connected. When two speaker systems are connected, care should be taken that net impedance does not become less than 4Ω.

Connecting Other Components

Make certain that the power cord is unplugged from the AC outlet when other components are to be connected to this unit. Unplug or turn off the other components which are already connected to the unit when another piece is to be connected.

Connect the plugs correctly to the left channel and right channel jacks. Push the plugs in all the way. Poor seating of the plugs tends to cause noise or intermittent sound.

CAUTION: The capacity of the AC convenience outlets at the rear panel are 180W for both SWITCHED and UN-SWITCHED. It is very dangerous to connect a component with a capacity for more power. Read the manual or labels on the component to check its power (watt) consumption before connecting it to this unit.

Automatic Tuning Method

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKER selector switch for the desired speaker system(s).
3. Press the FM switch of the FUNCTION selector for FM reception or the AM switch of the FUNCTION selector for AM reception. The FUNCTION indicator "fm" or "am" lights up and the STATION DISPLAY indicates the FM or AM frequency.
4. Press the AUTO switch of the TUNING mode selector.
5. Press either the "down" or "up" TUNING button to start scanning the broadcasted stations. To select a higher frequency than that indicated by the STATION DISPLAY, press the "up" button. To select a lower frequency, press the "down" button. The frequency changes until a broadcasted signal is tuned in, and the automatic scanning stops at that station. Then the SIGNAL STRENGTH indicator and TUNED indicator light up. When an FM stereo broadcast is received, the STEREO indicator lights up.
6. If the tuned frequency is not the desired broadcast station, press either the "up" or "down" button to resume the automatic scanning.
7. In an area where the field reception is not sufficient, the muting circuit may eliminate broadcasting sounds as well. Press down the MUTING switch to the OFF position (switch button in) in this case.
8. When the desired station is selected, adjust the VOLUME control knob and the BASS and TREBLE control knobs as desired.

NOTE: When fading (intermittent reception of a weak station) continues for several seconds during automatic tuning, the automatic tuning stop circuit is operated to stop automatic scanning. If the station is not the desired one, push the "up" or "down" TUNING button to restart automatic scanning.

When the broadcast is weak, automatic tuning may not be possible. In this case, make the selection manually, as described in the following section.

Manual Tuning Method

Manual tuning is useful when the frequency of the desired station is passed in the automatic tuning mode because the broadcast is weak.

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKER selector switch for the desired speaker system(s).
3. Press the FM switch of FUNCTION selector for FM reception or the AM switch of FUNCTION selector for AM reception.
4. Press the MANUAL switch of the TUNING mode selector.
5. Press the MUTING switch to the OFF position.
6. Press the AUDIO MODE selector to the MONO position.
7. Softly press either the "down" or "up" TUNING buttons to change the tuning frequency in small increments. The best tuning is obtained when many SIGNAL STRENGTH indicators and the TUNED indicator light up.
8. When the desired station is selected, adjust the VOLUME control knob and the BASS and TREBLE control knobs as desired.

Preset Memory Tuning

This feature enables the selection of one of eight AM and eight FM broadcasts by simply pressing a PRESET MEMORY button. This eliminates the need for Automatic or Manual Tuning. In order to use this feature, broadcast frequencies must first be entered into the PRESET MEMORY as follows:

1. Tune to the station to be memorized by using Automatic or Manual Tuning.
2. Press the MEMORY switch. The switch button illuminates in green. While this switch button is illuminated, press one of the PRESET MEMORY buttons numbered 1 through 8. The button pressed illuminates in green and presetting of the station is completed.
3. To cancel a memorized station and memorize a new station at that number, tune to the frequency of the new station and follow through as described in step 2 above. The old memory is automatically cleared, and the new station is memorized.

NOTE: Since this unit is provided with a memory backup circuit, the memory contents will remain stored after the power is turned off if the power cord is plugged into an AC outlet. The memory contents will remain stored for about three weeks when power cord is unplugged from an AC outlet. If the memory contents are cleared (erased), the presetting procedure must be performed again.

When the MEMORY switch is pressed, the switch illuminates in green for about 10 seconds. The memory function will only work while the MEMORY button is illuminated.

Last Station Memory Function

This function "remembers" the frequency last received before changing bands (FM/AM).

When changing the band from FM to AM and again to FM, the last received FM station will be tuned in.

This function also "remembers" the frequency of the station last received.

When the power is turned on, the frequency of the station last received is displayed by the STATION DISPLAY, irregardless of whether the station is a preset one or not.

Tape Recording

Recording from a program source (FM/AM broadcast, turntable or a component connected to AUX/DAD input terminals) on a tape deck connected to the TAPE 1 and/or 2 terminals is possible.

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKER selector switch for the desired speaker system(s).
3. Select the desired program source with the FUNCTION selector. The FUNCTION indicator lights up to indicate the program source selected.
4. Place the TAPE MONITOR selector to SOURCE position.
5. Place the AUDIO MODE selector at the MONO or STEREO position according to the program source.
6. Start recording by activating the tape deck connected to TAPE 1 and/or 2 terminals. The source sound can be listened to from the speakers or headphone.
7. To monitor the sound being recorded, press the TAPE MONITOR selector to either TAPE 1 or TAPE 2 according to the tape deck being recorded. The TAPE MONITOR indicator lights up, indicating the monitoring state.

NOTE: Recording onto the tape deck is carried out directly from the program source without being influenced by the volume, balance and tone controls of this unit.

Tape Dubbing

Two tape decks can be connected to this unit and dubbing can be done from the tape deck connected to the TAPE 1 terminal to the tape deck connected to the TAPE 2 terminal.

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKER selector switch for the desired speaker system(s).
3. Place the TAPE 1 switch of the TAPE MONITOR selector to the COPY 1 TO 2 position.
4. Place the AUDIO MODE selector to the MONO or STEREO position according to the program source.
5. After setting the tape deck connected to the TAPE 1 terminal for playback and the tape deck connected to TAPE 2 terminal for recording, dubbing will begin.
6. To monitor the sound being recorded, press the TAPE 2 switch of the TAPE MONITOR selector.

Tape Playback

Music tape reproduction

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKER selector switch for the desired speaker system(s).
3. Press TAPE 1 or TAPE 2 of the TAPE MONITOR selector and make certain that the TAPE MONITOR indicator "tape 1" or "tape 2" lights up.
4. Place the AUDIO MODE selector to the MONO or STEREO position according to the program source to be played back.
5. Insert a recorded tape in the tape deck and set the tape deck in the playback mode.
6. Advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.

Listening to a Record (Disc)

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKER selector switch for the desired speaker system(s).
3. Press the PHONO switch of FUNCTION selector and make certain that the FUNCTION indicator "phono" lights up.
4. Activate your turntable and place the stylus on the record (disc).
5. Turn the VOLUME control knob clockwise to increase the sound volume to the desired level.
6. If the disc has a large warp, press the SUBSONIC FILTER switch to its ON position.
7. Adjust the BASS and TREBLE control knob to obtain the desired tone.
8. Activate the LOUDNESS switch, HIGH CUT filter switch or AUDIO MODE selector as desired.

NOTE: If you hear a hum at average listening levels, turn the POWER switch off and check to see that the phono and the ground connections are secure. It sometimes occurs that, depending on the cartridge type used, less hum is created without the ground connection.

AUX/DAD Input Reproduction

Reproducing the sounds of a compact disc player, TV tuner or other auxiliary component.

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKER selector switch for the desired speaker system(s).
3. Press the AUX/DAD switch of FUNCTION selector and make certain that the FUNCTION indicator "aux/DAD" lights up.
4. Activate the auxiliary component connected to the AUX/DAD input terminal.
5. Advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.

Most of the problems are due to incorrect operation of this unit. If this unit does not operate as you intended, first check the items in the checklist. Also check other related

components such as the speakers and other electrical equipment you use with this receiver.

Problem	Cause	Remedy
The indication panel does not light up by pressing the POWER switch.	<ul style="list-style-type: none"> ●The power cord is not plugged in. 	<ul style="list-style-type: none"> ●Plug in the power cord securely.
The indication panel lights up, but no sound is heard.	<ul style="list-style-type: none"> ●The speaker wires are disconnected or breaking. ●The SPEAKER selector switches are set to the OFF position. ●The TAPE MONITOR switch is set to the ON position. ●The FUNCTION selection was not made properly. 	<ul style="list-style-type: none"> ●Check the speaker wires and connect them correctly. ●Press the SPEAKER selector switch to the ON position. ●Place the TAPE MONITOR switch to the SOURCE position. ●Press the proper FUNCTION selector according to the program source to be heard.
The STATION DISPLAY displays the frequency, but no sound is heard.	<ul style="list-style-type: none"> ●The speaker wires are disconnected or breaking. ●The displayed frequency does not carry a broadcast. ●The MUTING switch is set to the ON position and the broadcasting wave is weak. 	<ul style="list-style-type: none"> ●Check the speaker wires and connect them correctly. ●Tune to a broadcasted station. ●Press the MUTING switch to the OFF position.
<p>FM sound has a large amount interference.</p> <p>The STEREO indicator or TUNED indicator flickers, without completely illuminating.</p> <p>Sound distorts and/or the volume level becomes low.</p>	<ul style="list-style-type: none"> ●Incorrect connection to the antenna. ●Poor location and/or direction of the antenna. ●Transmitting station is too far away. ●Multi-path distortion is being caused by the mutual interference of broadcast signals received directly from the transmitting station (direct waves) and signals being reflected from nearby buildings or mountains (reflected waves). 	<ul style="list-style-type: none"> ●Check the antenna connection wire and connect them correctly. ●Try changing the location, height and/or direction of the antenna. ●If an indoor antenna is being used, change to an outdoor antenna. ●Use a more directional antenna.
A strange hissing noise is produced continuously or intermittently.	<ul style="list-style-type: none"> ●Caused by the "discharge phenomenon and the oscillation phenomenon" of nearby electric appliances (such as fluorescent lights, TV, motors, etc.). 	<ul style="list-style-type: none"> ●Place this unit farther away from these types of electric appliances. ●Install noise-filters on the electric appliances.
Broadcasting cannot be preset.	<ul style="list-style-type: none"> ●The PRESET MEMORY button is not pressed while the MEMORY switch button is illuminated. 	<ul style="list-style-type: none"> ●Press the PRESET MEMORY button while the MEMORY switch button is illuminating.
Station selection cannot be made by using the PRESET MEMORY button.	<ul style="list-style-type: none"> ●The power cord is not plugged in for three weeks or more. 	<ul style="list-style-type: none"> ●Set the preset memory again.

TROUBLESHOOTING CHECKLIST

Problem	Cause	Remedy
Sound is not heard from the speaker system on one side.	<ul style="list-style-type: none"> ●The connection of speaker wires are incorrect or incomplete. ●The wires to other equipment are disconnected. ●The BALANCE control knob is turned to either the extreme right or the left position. 	<ul style="list-style-type: none"> ●Check the speaker wires for disconnection or breaking and reconnect them correctly. ●Check the wires for disconnection and connect them correctly. ●Set the mark on the BALANCE control knob to the center position.
When listening to stereo sound, the left and right sounds are reversed.	<ul style="list-style-type: none"> ●The left and right speaker wires are reversed. ●The left and right wires connected to the other equipment are reversed. 	<ul style="list-style-type: none"> ●Check the speaker wires and connect them correctly. ●Check the wires to other equipment and connect them correctly.
Sounds are not heard in stereo.	<ul style="list-style-type: none"> ●The AUDIO MODE selector is set to the MONO position. 	<ul style="list-style-type: none"> ●Place the AUDIO MODE selector to the STEREO (button out) position.
When playing to a turntable, a low-pitched noise ("hum" or "buzz") is heard.	<ul style="list-style-type: none"> ●The ground connection cord of the turntable is disconnected. ●The connections of the turntable wires are incorrect or incomplete. 	<ul style="list-style-type: none"> ●Make the grounding connection correctly. ●Insert the turntable wire plugs firmly into the PHONO terminal of this unit.
When increasing the volume level while playing a turntable, an undesirable prolonged sound (howling) is heard.	<ul style="list-style-type: none"> ●"Howling" is created by the speakers and turntable. ●Too much low frequency sound is present. 	<ul style="list-style-type: none"> ●Place the speakers further away from the turntable. ●Place the turntable on a more solid surface. ●Decrease the setting of the BASS control. Turn off the LOUDNESS switch. Turn on the SUBSONIC FILTER.
Sound quality is poor.	<ul style="list-style-type: none"> ●Input components have not been set up correctly. ●Tone control is not proper. 	<ul style="list-style-type: none"> ●Check the antenna, cartridge of the turntable, or head of the tape deck, etc. and make corrections as needed. ●Adjust the BASS and TREBLE control knobs to obtain a desired tone.

Warranty and After-sale Service

- Please find the warranty card enclosed with this unit when you purchased it.
- After filling in the required items and reading the contents of the warranty card, keep it in a safe place.
- Warranty term is two years after purchasing.
- If this unit does not operate normally, first check this unit by yourself following the instructions provided in "Troubleshooting Checklist" in the manual.
- If a problem persists even though you have done as suggested in the checklist, consult your authorized Harman Kardon service station.
- Repair within the warranty term is made according to the prescriptions specified in the warranty card. For details, refer to the warranty card.