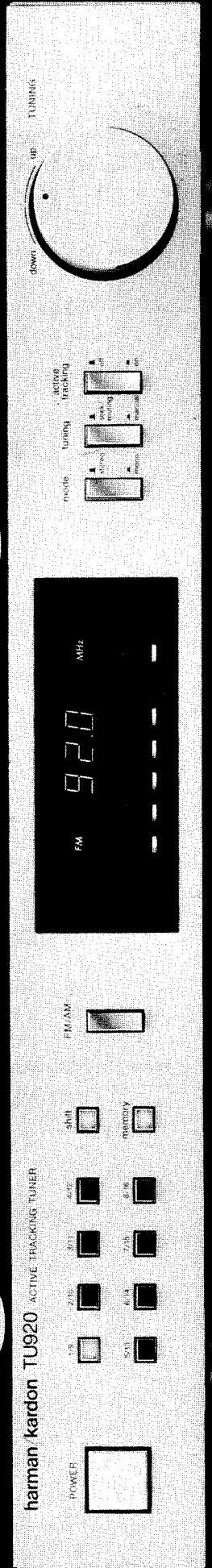


harman/kardon

DIGITAL SYNTHESIZED
QUARTZ-LOCKED TUNER
ACTIVE TRACKING TUNER

TU91/TU920

owner's manual



SPECIFICATIONS

Congratulations on your purchase of the Harman Kardon TU911 Digital Synthesized Quartz-Locked Tuner/TU920 Active Tracking Tuner.

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

	TU911	TU920
FM Section		
Usable FM Sensitivity (Mono): 10.8dBf/0.95µV (dBf/µV-75 ohms)		10.8dBf/0.95µV
50dB Quieting Sensitivity, Mono/Stereo (dBf/µV-75 Ohms)	: 37dBf/19.4µV	37.3dBf/20µV
FM Signal-to-Noise Ratio (65dBf)		
Mono	: 82dB	82dB
Stereo	: 74dB	74dB
THD (65dBf, 1kHz)		
Mono	: 0.2%	0.1%
Stereo	: 0.3%	0.12%
Stereo Separation (65dBf, 1kHz)	: 40dB	50dB
Alternate Channel Selectivity	: 50dB	* 75dB
Adjacent Channel Selectivity	: 5dB	* 30dB
Capture Ratio	: 1.3dB	1.3dB
AM Rejection (45dBf)	: 55dB	55dB
IF Rejection	: 80dB	90dB
Spurious Response Rejection	: 75dB	80dB
Image Rejection	: 50dB	50dB
AM Section		
AM Sensitivity (External Antenna)	: 15µV	15µV
AM Signal-to-Noise Ratio	: 53dB	53dB
AM Alternate Channel Selectivity	: 50dB	50dB
AM IF Rejection	: 60dB	60dB
AM Image Rejection	: 45dB	45dB
General Section		
Dimensions (W x H x D)	: 17-7/16"x2-11/16"x14-3/16" (443 x 68 x 360 mm)	
Weight	: 7.3lbs. (3.3kg)	
Power Supply	: AC 120V, 60Hz	
Power Consumption	: 14W	



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 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.



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.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

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

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UNE RALLONGE. UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS

* Value assumed when Active Tracking is ON.

All specifications and features subject to change without notice.

This manual applies to champagne gold and black versions with models TU911/TU920.

■ Digital Synthesized Quartz-Locked Tuning

Quartz-locked tuning accuracy eliminates drifting and mistuning, thereby guaranteeing optimum sound quality. Sixteen stations, FM or AM, can be simultaneously stored in the memory.

■ Exceptional Sound Quality

The TU911/TU920 provides low distortion, low noise, wide bandwidth and excellent stereo separation. In addition, the construction, grade of components and layout are of a high quality, and maintain audio signal purity.

■ One Week Memory Back-Up

The preset memory of up to 16 AM or FM stations is stored indefinitely while the unit is connected to a "live" AC receptacle, and will be retained for one week when disconnected from AC power.

■ Improved MPX Stereo Decoder

The FM stereo quality has been improved over previous designs to provide lower distortion and wider separation.

■ Active Tracking (TU920 only)

Through Harman Kardon's patented Active Tracking circuitry, high selectivity is provided without degrading stereo separation and T.H.D.

Always Use at 120V AC

This unit is designed for operation with 120V AC. Connect only to 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 your unit will be left unused 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 avoid dropping heavy objects on it. Also do not make a knot in the power cord. Not only may the cord be damaged, it can also cause a short circuit and 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 draft from an air conditioner.
- ▶ Places subject to excessive vibration or dust.
- ▶ Poorly ventilated places.

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 dampened with mild soapy water and then wipe with a dry cloth.

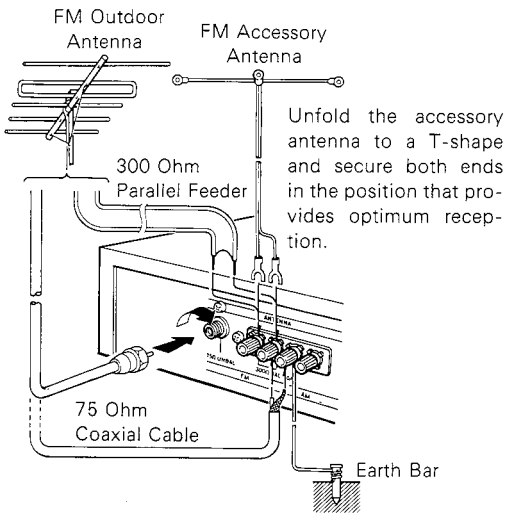
Never use benzene, thinner, alcohol or other volatile agents, and avoid spraying an insecticide near the unit.

FM Antenna

If experiencing poor FM reception while using the accessory antenna, the use of 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 300 Ohm parallel or 75 Ohm coaxial cables. We recommend a 3C-2V or 5C-2V 75 Ohm coaxial cable to be used with this unit to enable it to perform to its fullest capacity. The coaxial cable has a stronger resistance against loss and interference compared to a parallel feeder.

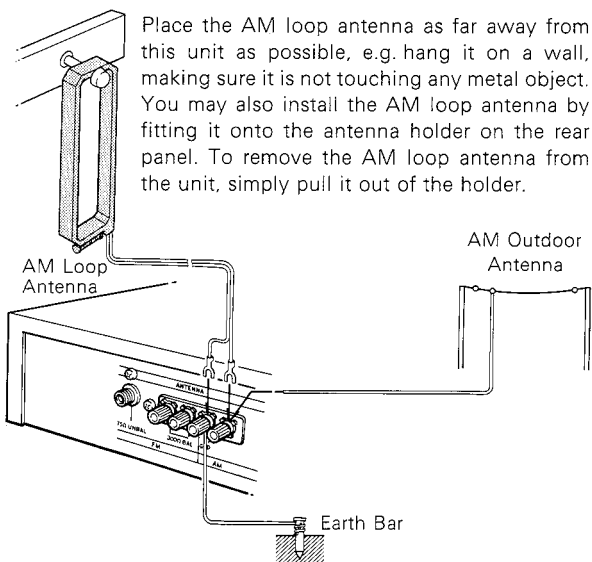
If there is a lot of noise while receiving an FM broadcast, we recommend that you make a ground connection. Connect one end of a thick wire to the antenna "GND" terminal and wind the other end around an earth bar or earth plate and drive it into the ground.



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

AM Antenna

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



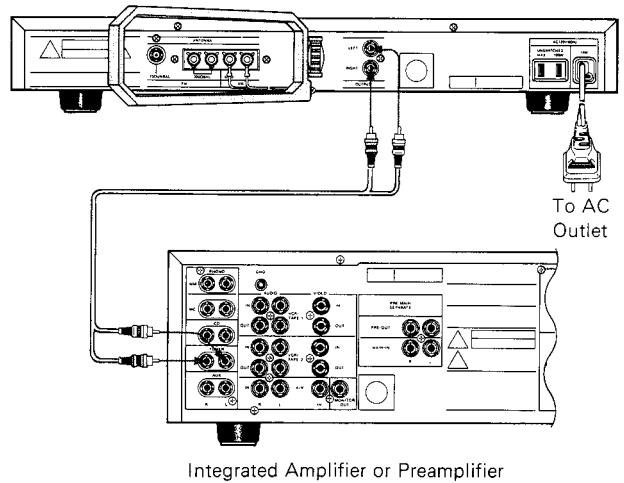
Connecting to an Integrated Amplifier or Preamplifier

Connect the "OUTPUT" jacks of this unit and the TUNER or AUX input jacks of the preamplifier or the integrated amplifier by using the attached connection wire.

Carefully connect the plugs to the left and right channel jacks. Push the plugs in all the way. Poor setting of the plugs tends to cause hum or intermittent sound and may damage the speakers.

NOTE: While you are connecting this unit to the rest of your high fidelity system, please unplug the power cord, disconnecting not only this unit but all the components, from the AC outlet.

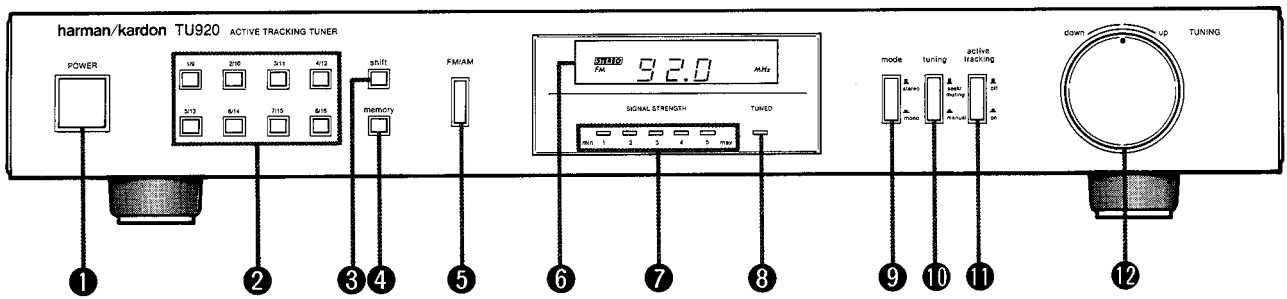
Do not interwind the connection wires with the power cord. If interwound, the sound quality may be degraded.



AC Convenience Receptacle (TU920 only)

The TU920 is provided with an AC convenience receptacle on the rear panel for supplying power to a turntable, tape deck or other low power component. The receptacle has a power capacity of 100 watts. Check the component's owner's manual to find its power requirement.

The power to this "UNSWITCHED" receptacle is independent of this unit's power switch.



❶ POWER SWITCH (POWER)

Pressing this switch will turn on the power and the STATION DISPLAY will indicate the receiving frequency. Press the switch again to turn the power off.

❷ PRESET BUTTONS

Each PRESET button has the capacity for memorizing two broadcast frequencies that can be in either the AM or FM band. The eight PRESET buttons are assigned the numbers of 1 through 8, or 9 through 16, depending on the setting of the "shift" button.

❸ SHIFT BUTTON (shift)

When the "shift" button is not illuminated, the PRESET buttons are assigned the numbers 1 through 8. When the "shift" button is illuminated, the PRESET buttons are assigned the numbers 9 through 16. Whenever the "shift" button is pressed, it will change from one state to the other.

❹ MEMORY SWITCH (memory)

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

Note: If you do not press a PRESET button while the "memory" switch is illuminated, memory presetting cannot be made.

❺ FM/AM SWITCH (FM/AM)

Pressing this switch alternates between FM and AM reception.

❻ STATION DISPLAY

This digital display indicates the band (AM or FM) and frequency of the tuned station. Also, when an FM stereo broadcast is received, the "STEREO" display will illuminate.

❼ SIGNAL STRENGTH INDICATORS (SIGNAL STRENGTH)

The relative strength of the signal being received is displayed by these indicators. Tune and adjust the antenna position for the highest possible indication. (The TU911 is provided with 3 segment LED.)

❽ TUNED INDICATOR (TUNED)

This indicator lights when a broadcast frequency is correctly tuned in. It may not light for a weak station, even when it is correctly tuned.

❾ MODE SWITCH (mode)

This switch is used to receive a weak broadcast signal. When it is depressed, weak FM broadcasts will be received in mono, thereby reducing the additional noise created when a weak signal is received in stereo.

❿ TUNING MODE SELECTOR (tuning)

Either an automatic or manual tuning mode can be selected. When this switch is pressed to the "manual" position, tuning is made manually. Press and release this switch to the "seek/muting" position and automatic seek tuning is activated.

⓫ ACTIVE TRACKING SWITCH (active tracking) (TU920 only)

The active tracking feature lets you eliminate strong adjacent FM signals which would normally obscure or interfere with the station you wish to receive. If you are receiving interference from an adjacent station, depress the "active tracking" switch to reduce the interference.

⓬ TUNING SWITCH (TUNING)

This is a rotary switch. When turned clockwise, it will raise the tuned frequency. When turned counterclockwise, it will reduce the tuned frequency. In the automatic seek tuning mode, the "TUNING" switch should be turned briefly and then released. The tuned frequency will continue to automatically increase or decrease until a strong station is found.

Automatic Seek Tuning

1. Turn the volume control knob of the amplifier to the minimum level and turn on the amplifier. Then, select the tuner function on the amplifier according to its owner's manual.
2. Press the "POWER" switch and STATION DISPLAY will indicate the FM or AM frequency.
3. Select FM or AM reception using the "FM/AM" switch.
4. Set the "tuning" mode selector to the "seek/muting" position.
5. Slightly rotate the "TUNING" switch knob clockwise or counterclockwise to start seeking the broadcast station. To select a higher frequency than that indicated by the STATION DISPLAY, turn the knob clockwise (to the "up" direction). To select a lower frequency, turn the knob counterclockwise (to the "down" direction). The frequency changes until a broadcasted signal is tuned in, and the automatic seeking stops at that station. The "SIGNAL STRENGTH" indicator progressively illuminates according to the reception level, and the "TUNED" indicator will illuminate to indicate that the station is tuned in. When receiving an FM stereo broadcast, the "STEREO" display will illuminate automatically.
6. If the tuned frequency is not the desired broadcast station, slightly rotate the "TUNING" switch knob clockwise or counterclockwise to resume automatic seeking.
7. In an area of poor signal strength, additional noise may be created when a weak signal is received in stereo. In this case, the "mode" switch should be depressed to the "mono" position.
8. When the desired station is selected, advance the volume control knob of the amplifier to a comfortable level.

NOTE: When a broadcast is weak, automatic seek tuning to that frequency may not be possible. In this case, place a dedicated antenna outdoors or tune manually as described in the following section.

Manual Tuning

Manual tuning is useful when the desired station is too weak to be picked up in the automatic seek tuning mode.

1. Set the volume control knob of the amplifier at minimum level and press the "POWER" switch.
2. Select FM or AM reception using the "FM/AM" switch.
3. Depress the "tuning" mode selector to the "manual" position.
4. Depress the "mode" switch to the "mono" position.
5. Rotate the "TUNING" switch knob clockwise (to the "up" direction) or counterclockwise ("down" direction) to find the desired broadcasting station. The best tuning is obtained when many segments of the "SIGNAL STRENGTH" indicator light up. If it is the desired station, leave the "TUNING" switch at that position. The station will then be locked in.
6. When the desired station is selected, advance the volume control knob of the amplifier to a comfortable level.

Preset Memory

This feature enables the selection of one of sixteen AM or FM broadcasts by simply pressing the PRESET and "shift" buttons. 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 Seek or Manual Tuning.
2. Press the "memory" switch. It will illuminate in green for 10 seconds. During this time, the AM or FM broadcast frequency that is being received can be entered into one of the 16 memory presets. To enter the broadcast frequency into a preset numbered 1-8, press the corresponding PRESET button while the "memory" button is illuminated. To enter into a preset numbered 9-16, press the "shift" button (it will illuminate) and then the corresponding PRESET button.
3. To cancel a memorized station and memorize a new station at that number, tune to the frequency of the new station and follow step 2 above. The old station 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 for about one week 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" switch 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, regardless of whether the station is a preset one or not.

TROUBLESHOOTING CHECKLIST

Most of the problems consumers have with their high fidelity systems are due to incorrect operation. If this unit does not operate as you intended, first check the items in the following checklist. Also check other related components such as the

amplifier, speakers and other electrical equipment you use with this tuner. If a problem persists even though you have done as suggested in the checklist, consult your authorized Harman Kardon service station.

Problem	Cause	Remedy
The STATION DISPLAY does not display frequency when the "POWER" switch is pressed.	<ul style="list-style-type: none"> • The power cord is not plugged in. • The power cord is plugged into a receptacle that is not "live". 	<ul style="list-style-type: none"> • Plug in the power cord securely. • Plug the power cord into a "live" receptacle.
No sound is heard.	<ul style="list-style-type: none"> • The tuned frequency does not carry a broadcast. • The muting function is active and the signal strength is weak. • The function switch or speaker switch of the amplifier is not set in the correct position. • The connection wires are disconnected or broken. 	<ul style="list-style-type: none"> • Tune to a broadcasted station. • Depress the "mode" switch to the "mono" position, and tune using the manual method. • Read the owner's manual of the amplifier and operate it correctly. • Check the connection wires and connect them correctly.
FM sound has a large amount of interference. The "STEREO" display is not completely illuminating. The "TUNED" indicator does not illuminate. Sound distorts and/or the volume level becomes low.	<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 wires 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 buzzing or 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 further 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 button is not pressed while the "memory" switch is illuminated. 	<ul style="list-style-type: none"> • Press the PRESET button while the "memory" switch is illuminating.
Station selection cannot be made by using the PRESET button.	<ul style="list-style-type: none"> • The power cord has not been plugged in for one week or more, and the memory has been erased. 	<ul style="list-style-type: none"> • Set the preset memory again.