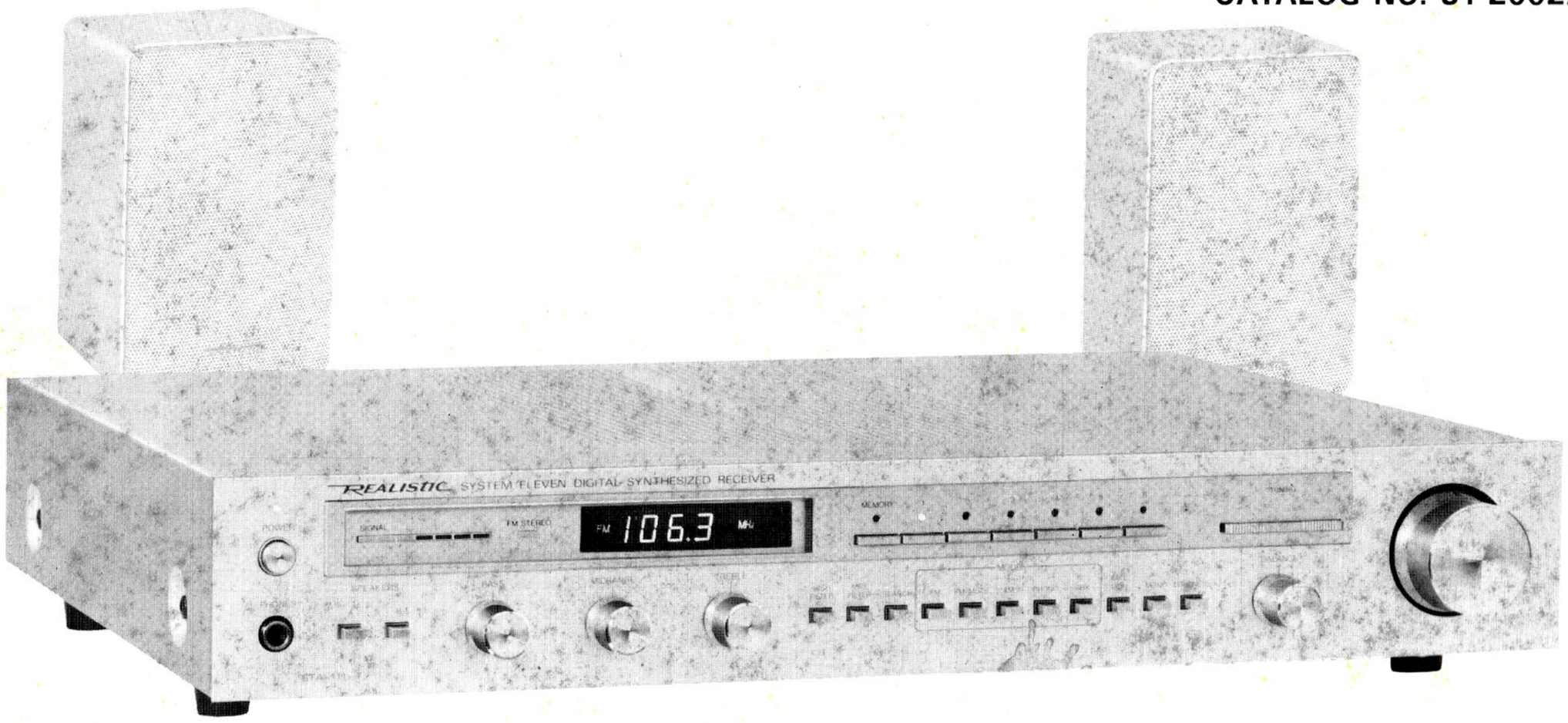
SYSTEM ELEVEN OWNER'S MANUAL

PLEASE READ BEFORE OPERATING THIS EQUIPMENT.

STA-111

SOLID STATE am/fm stereo receiver

CATALOG NO. 31-2002A



CUSTOM MANUFACTURED FOR RADIO SHACK, A DIVISION OF TANDY CORPORATION

REALISTIC®

REALISTIC®

THE BRAND WITH OVER 10,000,000 CUSTOMERS

In choosing this fine Realistic product you have demonstrated a rather acute awareness of the good old American custom called "getting the most for your money". With Realistic this is not an idle boast.

The "line" was born in Boston, long famous for Yankee ingenuity—and thrift. Its original intent was to bridge a gap between $100 equipment and $25 equipment where, at the time, there was a real void in hi-fi merchandise.

Early products were a $39.95 FM tuner, a $29.95 preamp/amplifier, a $19.95 speaker. Soon we found ourselves a unique niche as manufacturing retailers.

Capacity and ability grew simultaneously. Soon Realistic hi-fi products—loudspeakers, receivers, tape decks, even table radios—began receiving critical acclaim for faultless performance as well as value. Dealers and franchises from all over the world began requesting a Realistic franchise.

Today you can shop The Worldwide Supermarket of Sound® with the confidence that you're getting the widest selection quality hi-fi equipment available—anywhere—whether you're looking at budget-priced extension speakers or true audiophile amplifiers, tuners and receivers.

RADIO SHACK LIMITED WARRANTY

This equipment is warranteed against defects for 2 years from date of purchase. Within this period, we will repair it without charge for parts and labor. Simply **bring your sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover equipment subjected to misuse or accidental damage.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We Service What We Sell

For your own protection, we urge you to record the Serial Number of this unit in the space provided. You'll find the Serial Number on the back panel of the unit.

Serial Number	

Your new STA-111 incorporates the vary latest in microprocessor and MOS FET technology to deliver versatility and performance unmatched in its price range!

The built-in CMOS LSI Frequency Synthesizer eliminates the usual dial scale and replaces it with a digital readout. Your STA-111 tunes up or down the AM and FM bands automatically. The FM front-end uses a dual-gate MOS FET for immunity from overloading due to strong local signals. The special equalization circuitry allows your STA-111 and Minimus speakers to deliver truly outstanding sound from a compact system.

- Up to 12 stations (6 for FM and 6 for AM) can be programmed into the microprocessor controlled memory, ready for one touch recall.
- Memory contents are automatically protected for up to about two days in case of power loss.
- Special equalization change-over switch (**SYSTEM SW**itch on back) tailors the STA-111's circuitry to combine with MINIMUS-11 (or 7) speakers to provide astoundingly great sound from a small package.
- Receiver amplifier uses the latest IC's for exceptionally low noise and distortion.
- Seven segment LED signal strength indicator for AM and FM.
- Integrated circuits are used for all critical circuit stages—PLL for rock-stable Stereo, plus IF/Detector, Phono preamp and tone control.
- For total circuit protection, we've built-in **three** special circuits—time delay relay, thermal cut-out plus over-drive protection.
- Detented Bass, Treble, Midrange and Volume controls.
- Full Tape Monitoring facilities.

Note: Before operating your STA-111 for the first time, please read this manual carefully. It will tell you how to connect your Receiver and how to get the most enjoyment from your system.

REALISTIC®

SPECIFICATIONS

AMPLIFIER

Audio Output Power at no more than 0.02% Total Harmonic Distortion into 8 ohms, over the audio spectrum, 20 – 20,000 Hz.	**: 30 watts per channel (minimum RMS power, both channels driven)**
Frequency Response (1 watt, AUX In)	: 30 – 20,000 Hz ± 1 dB
IM Distortion (25 watts, 70/7,000 Hz)	: 0.008%
Signal-to-Noise Ratio	: 90 dB (phono), 100 dB (AUX)
Input Sensitivity	: Phono: 2.5 mV AUX & Tape: 160 mV
Phono Equalization	: RIAA ± 2 dB
Tone Control Action	: Bass: ±10 dB @ 100 Hz : Midrange: ±6 dB @ 1.5 kHz Treble: ±10 dB @ 10 kHz
Total Harmonic Distortion (20 watts)	: 100 Hz = 0.006% 1 kHz = 0.006% 10 kHz = 0.01%
Loudness Compensation	: 10 kHz = +4 dB, 100 Hz = +6 dB

FM TUNER

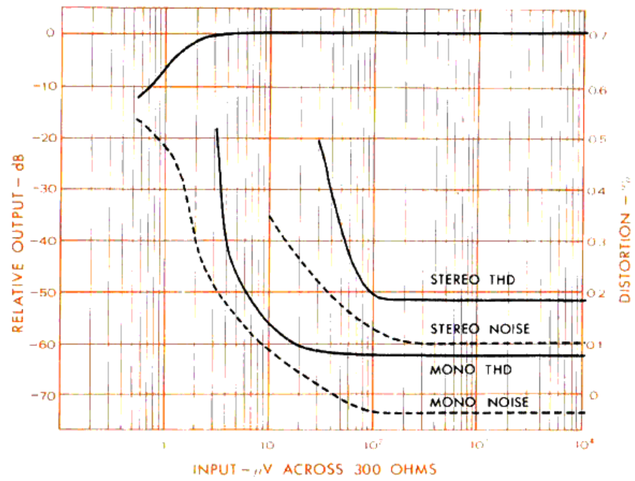
Sensitivity (S/N 30 dB)	: 1.7 μV, IHF (9.8 dBf)
Limiting Sensitivity (-3 dB)	: 1.2 μV (6.8 dBf)
Signal-to-Noise Ratio	: 70 dB
Capture Ratio	: 1.0 dB
Total Harmonic Distortion (1 mV)	: Mono = 0.1%, Stereo = 0.3%
Image Rejection	: 70 dB
IF Rejection	: 80 dB
Selectivity	: 60 dB
Stereo Separation at 1,000 Hz	: 45 dB

AM TUNER

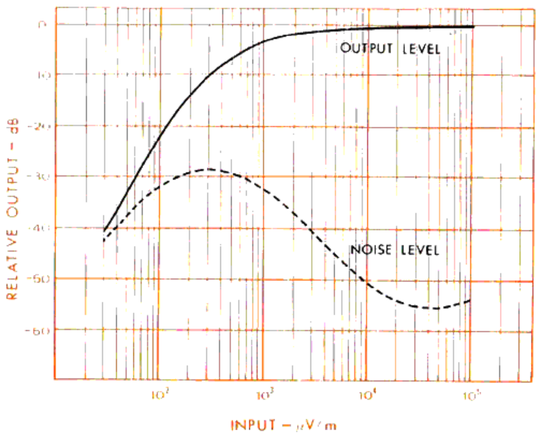
Sensitivity	: Radiated: 250 μV/m (for 20 dB S+N/N) Terminal: 20 μV (for 20 dB S+N/N)
Image Rejection	: 40 dB
IF Rejection	: 35 dB
AGC Figure-of-Merit	: 45 dB
Total Harmonic Distortion (10 mV/m)	: 0.8%
Signal-to-Noise Ratio (5 mV/m)	: 50 dB
RF Interference Rejection	**: Rated Excellent**
POWER REQUIREMENTS	: 120 VAC, 60 Hz, 200 watts max. (220/240 VAC, 50 Hz, 200 watts max. for U.K. and Australian models)

LABORATORY MEASUREMENTS (typical)

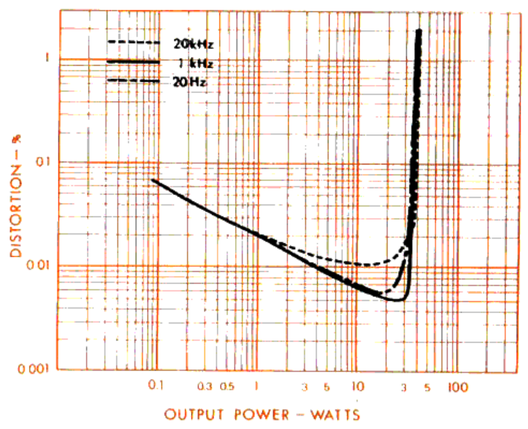
FM & Quieting and Distortion



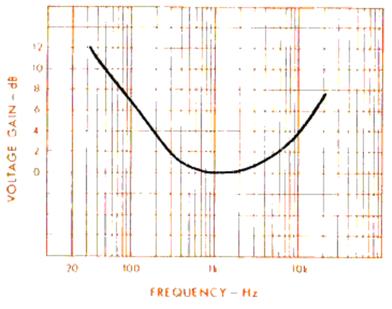
AM Quieting



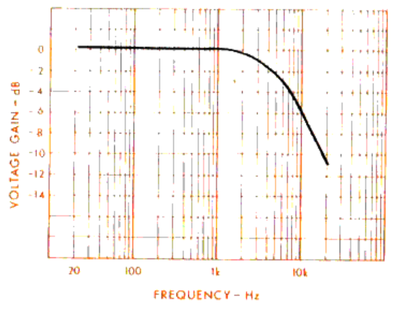
Distortion vs Power Output



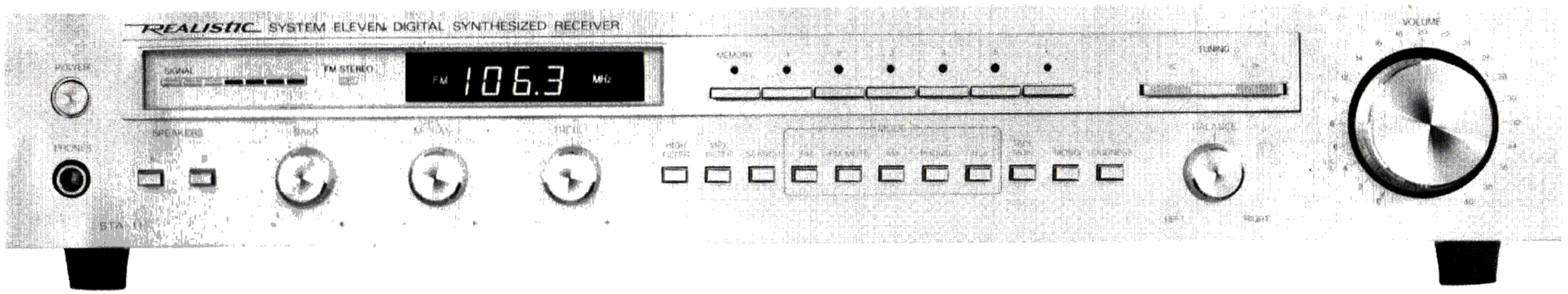
Loudness Contour



High Filter Action



REALISTIC®



CONTROL FUNCTIONS

POWER

Turns the Receiver on when pushed in—off when pushed a second time.
With POWER on, the red indicator LED above this switch will light.

PHONES

Connect a pair of headphones here.

SPEAKERS

Pressing in the **A** switch activates the main speakers only. Pressing in **B** switch activates the remote speakers only. Pressing in both **A** and **B** will allow use of both main and remote speakers. If you want to listen through headphones, leave both **A** and **B** in their "out" (fully extended) positions to turn off all speakers.

BASS, MIDRANGE and TREBLE

Rotate clockwise to increase the bass, midrange and treble response of your STA-111. Rotate counterclockwise to decrease the bass, midrange or treble. At their center ("twelve o'clock") positions, these controls will not affect the sound from your STA-111. Each control is detented (divided into steps) to allow quick resetting.

HIGH FILTER

When pressed in, minimizes hiss, scratches and other high-frequency noise.

MPX FILTER

In FM Stereo reception, minimizes hiss of high-frequency noise when pressed in. However, stereo separation at high-frequencies will be reduced. When making FM recordings using Dolby NR equipment, be sure to press this button in (helps to assure that all 19 kHz stereo pilot carrier is removed from recording signal).

SEARCH

Selects the Auto or Manual Tuning mode. Press in to set to Auto Tuning mode.

MODE push buttons

FM—press in to receive FM radio stations.

FM MUTE—press in to receive FM radio stations and eliminate interstation hiss.

AM—press in to receive AM radio stations.

AUX—press in to activate the pair of AUX jacks on the rear. This may be used with any high-level signal source such as another tuner, a tape deck, ham radio, TV sound, phono with ceramic or crystal cartridge, etc.

PHONO—press in to activate the pair of PHONO jacks on the rear; use in conjunction with a record changer/turntable with a magnetic cartridge.

REALISTIC®

TAPE MONitor

Lets you hear your tapes with push button ease, no matter what **MODE** position. If you have a three head deck, press in **TAPE MON** to hear the tape after it's been recorded. If no tape is playing, pressing this button will silence the system. Pressing this button connects the **TAPE IN** jacks on the rear to the amplifier circuitry—and disconnects any other input source. However, the input source (**FM, AM, AUX** or **PHONO**) will still be available at the **TAPE OUT** jacks.

MONO

Press in to defeat stereo operation (both channels will carry a Left + Right signal). Leave button out (push a second time to release to out position) to return to normal stereo operation.

LOUDNESS

Introduces a special low and high-frequency emphasis at low listening levels. This is done because the human ear is less sensitive to these frequencies at low listening levels. Press again to remove Loudness compensation from the circuit. Use the position which provides the most pleasing sound reproduction for your taste.

BALANCE

Use to provide best balance of sound between channels.
At the center position (you'll feel a slight "catch"), the sound will be equal from both channels.

VOLUME

Adjust for desired level of sound. It adjusts the sound level for both channels—from minimum to maximum. You'll notice that the **VOLUME** control is "stepped" for convenient reference (you can always return to a previous setting by referring to the numbered step position).

SIGNAL

This set of seven LEDs indicate AM and FM signal strength.
These LEDs will light up from left to right in order according to the signal strength. When receiving a very strong signal, all LEDs will light up at once. Tune for the highest indication.

STEREO Indicator

This bright red LED lights up when the **MONO** button is out and you are tuned to a stereo FM signal.

Digital FREQUENCY Display

The bright blue digital display shows the frequency of each station you select with **TUNING** buttons or Memory buttons. If you know the frequency of station which you want to listen to, tune so the frequency display shows the frequency desired.

NOTE: When tuning FM stations, the last digit will always be an odd number. Since FM station frequencies are only assigned on odd-numbered channel frequencies, the frequency display is designed to show only the odd numbers.

For European models, the tuning frequency will change in 50 kHz steps on FM.

For AM, the last digit will always be zero ("0") for USA models, as AM station frequencies in USA are assigned every 10 kHz apart.

For European/Australian models, the tuning frequency will change in 9 kHz steps on AM.

MEMORY

Press to enter the displayed frequency into memory. The indicator LED shows the Receiver is ready to memorize a station frequency (within 5 seconds) after you press **MEMORY** button.

Memory 1 to 6

Use these buttons to store up to 12 of your favorite stations in memory for immediate recall by pushing one button (You can set 6 for FM and 6 for AM.)

Auto (Search) TUNING down/up

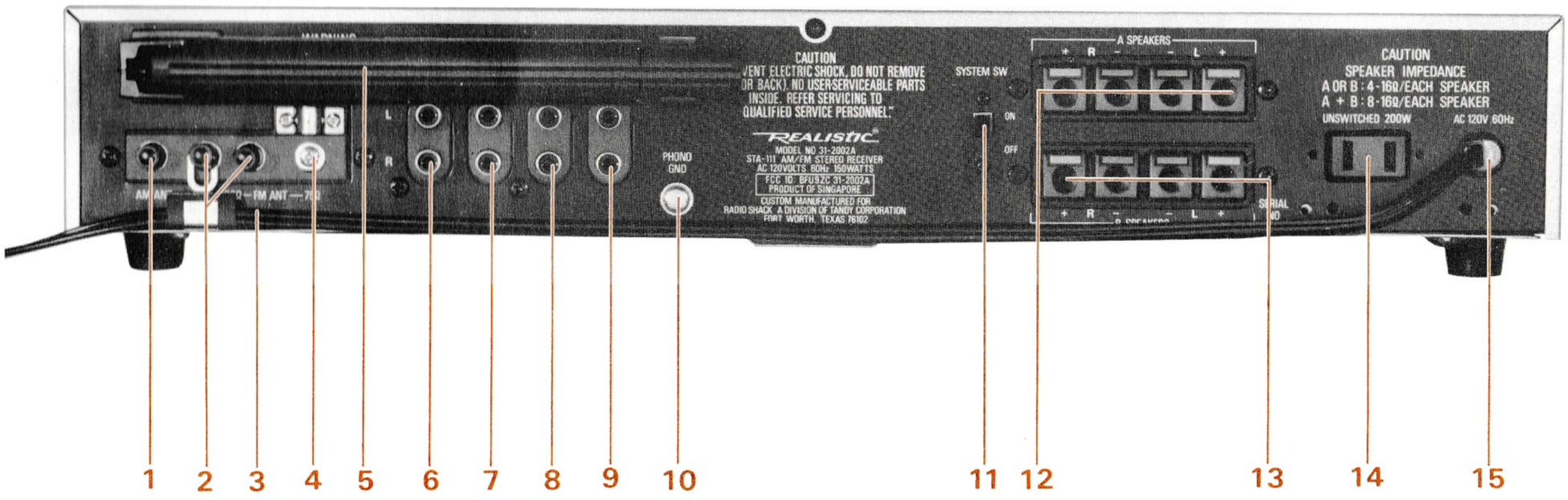
With **SEARCH** button in, press "up" (>) [or "down" (<)] side of key to search for next higher (or lower) frequency station.

Manual TUNING down/up

By pressing the **TUNING** "down" (<) button (or **TUNING** "up" (>) button) once, the frequency shown on display decreases (or increases) by one step.
Keep pressing to keep tuning.

REALISTIC®

Rear Panel Features



REALISTIC®

1. **AM ANTenna Screw Terminal** — Connect an external AM/short-wave antenna to this screw for long distance AM reception. In most areas the built-in antenna will provide excellent reception.

2. **FM ANTenna 300Ω Screw Terminals** — Connect antennas using standard 300-ohm lead-in to these screws.

3. **FM Line Cord Antenna** — As a temporary set up, connect this convenient antenna to the 300Ω FM screw terminal illustrated to provide FM reception in most metropolitan areas. To realize maximum benefit from your Receiver's FM section we urge you to use an external/outside antenna. Disconnect the line cord antenna when using an external FM antenna.

4. **FM ANTenna 75Ω Screw Terminal**— Connect an antenna using 75-ohm coaxial lead-in. Coaxial cable provides extremely high resistance to static and electrical noise.

5. **Built-in adjustable ferrite loopstick AM antenna** — Is adequate for most areas for AM reception. Swing down and move around for best reception.

6. **PHONO Jacks** — connect Record Changer/ Turntable with magnetic cartridge to these jacks. These jacks are active when PHONO push-button is pressed.

7. **AUX** — Accepts output from any high-level source — tape deck ceramic or crystal phono cartridge, etc. These jacks are active when AUX switch is pressed in.

8. **TAPE IN Jacks** — connect from Tape Deck's Output jacks for tape playback. To activate these jacks, TAPE MONitor must be pressed in.

9. **TAPE OUT Jacks** — connect to Tape Deck's Auxiliary Inputs for recording any one of the Amplifier's program sources. The output from these jacks is unaffected by **VOLUME**, Tone or other front panel controls.

10. **PHONO GND Terminal** — connect the green/ black lead from the Record Changer/Turntable to this screw (to reduce or eliminate hum).

11. **SYSTEM Switch** — Set to ON when using Minimus-7 or Minimus-11 speakers. This activates the special equalization circuitry in your STA-111, resulting in full dynamic range and superb fidelity from your Minimus speakers.
If you use other speaker systems, experiment and set to both OFF and ON positions. Use the position that results in the best sound.

12. **A SPEAKERS Push Terminals** — Powers main speakers.

13. **B SPEAKERS Push Terminals** — Powers remote speakers.

14. **UNSWITCHED Convenience Outlet** — Powers any audio accessory up to 200 watts. The front panel **POWER** switch does not affect this receptacle. (Not available for UK models.)

15. **AC Line Cord** — connect to a source of 120 volts, 60 Hz AC power (220/240V AC 50 Hz for U.K. and Australian models).

REALISTIC®

CONNECTIONS

BEFORE MAKING CONNECTIONS:

1. Do not plug in the Receiver's power cord.
2. Be sure **POWER** is off.

NOTE: To reduce hum, use shielded audio cables for all connections except for speakers.

SPEAKERS

For superior performance and sound, we recommend using our Minimus-11 (or Minimus-7) speaker systems. They're available at your local Radio Shack.

The STA-111 is designed for use with 4-16 ohm speakers. However, if more than one set of speakers is being connected, use only 8-16 ohm systems. This will prevent the Receiver's amplifier section from being overloaded. If you are using 4 ohm speakers, connect only one set of speakers or use only one set of speakers at a time.

The STA-111 has two sets of speaker outputs: A (main) and B (remote). For maximum bass response, be sure to connect the speakers properly. Connect the red (+) Receiver speaker output to the red (+) terminal of the Minimus-11/7 speaker; connect the black (—) Receiver speaker output to the black (—) terminal of the Minimus speaker. Most speaker wire is marked with a ridge along one conductor or is color-coded to help you make the proper connection.
Be sure no stray strands of wire touch another terminal or the chassis—a harmful short could result. Use only as much wire as necessary to connect the speakers.

PHONOGRAPH

Connect the turntable leads to the **PHONO** input. If the turntable has a ground wire (usually black or green) connect it to the **PHONO GND** screw. Plug the turntable's AC cord into the rear panel outlet or a wall socket.

TAPE DECK

For recording, connect the Receiver's **TAPE OUT** jacks to the recorder's Aux or Line input. For playback, connect the deck's Line or Output jacks to the Receiver's **TAPE IN** jacks.

ANTENNAS

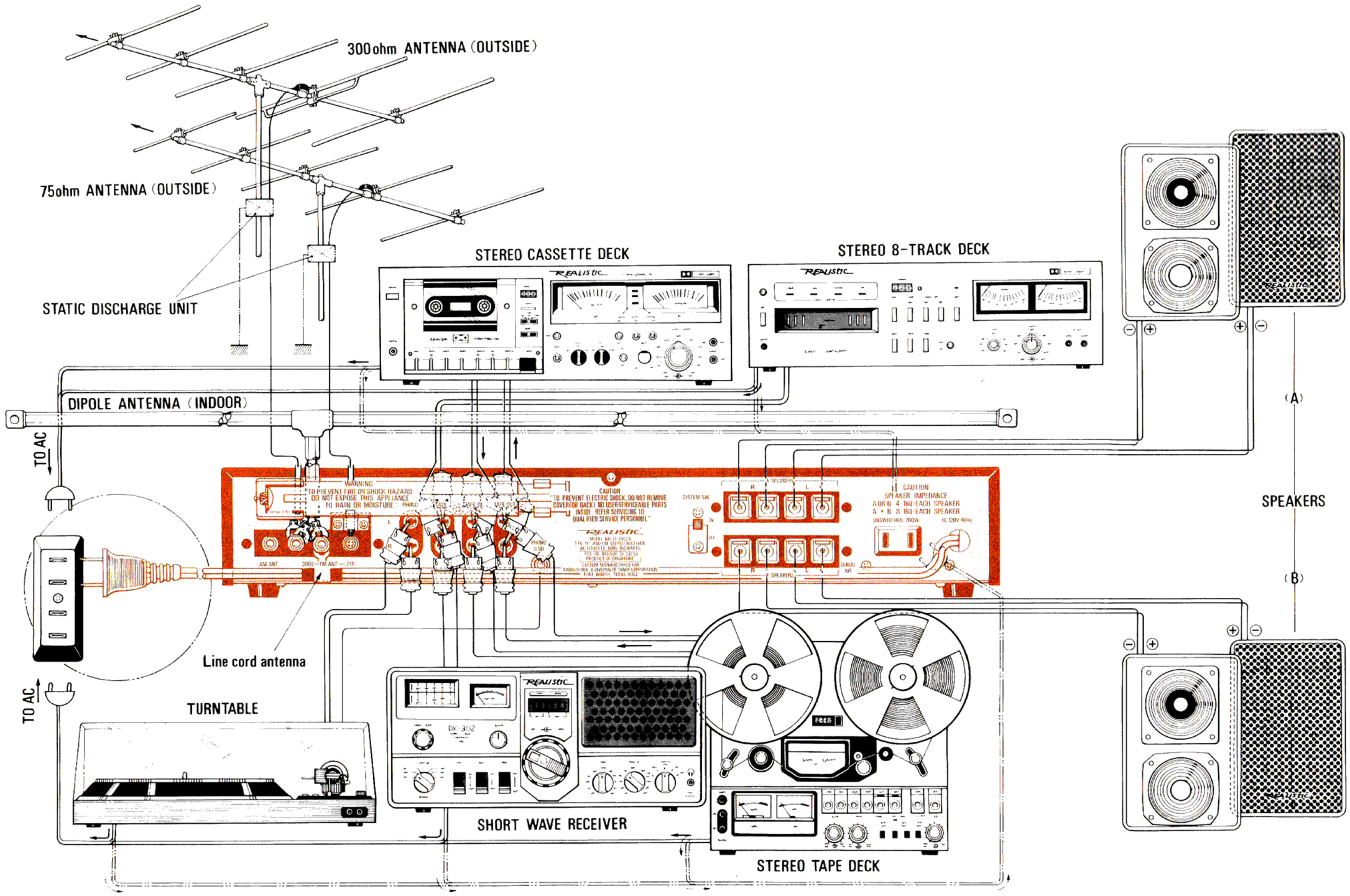
For best results, you should connect an external/outside antenna to the FM ANT terminals. See HINTS FOR BETTER SOUND. The built-in AM antenna requires no attention (other than to swing it out and away from the back of the Receiver).

AUXILIARY

Plug the output from any high level source into the AUX jacks. This input is ideal for a second tuner, TV audio, ceramic or crystal phono cartridges, a tape player, shortwave radio, etc.

REALISTIC®

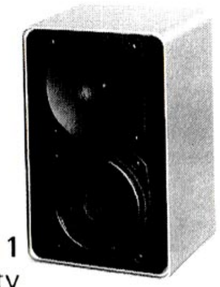
TYPICAL "SYSTEM ELEVEN"



REALISTIC®

CHOOSING THE REST OF YOUR SYSTEM

SPEAKERS



The STA-111 is primarily designed for use with our Minimus-11 or Minimus-7 metal cabinet speakers. Special equalization circuitry in the STA-111 allows amazing sound quality when used with these Minimus speakers. Your STA-111 has two sets of speaker outputs (for both main and remote speakers). You may want to use the Minimus-11 for your main speakers and the Minimus-7 for remote speakers.

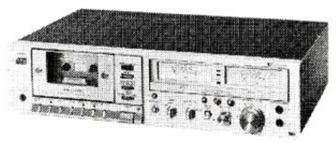
Of course, you can use other types of speaker systems satisfactorily with your STA-111. Your local Radio Shack has a wide selection of excellent speakers. Stop by and take a look *and listen!*

TURNTABLE

For convenience, most people prefer a record changer (often called an automatic turntable) to a manual turntable. A changer will pay an entire stack of records and return the tonearm to its rest at the end of the last record.

For the best sound, your turntable should be equipped with a magnetic cartridge. Cartridges equipped with conical styli (needles) are usually inexpensive and have good sound. But a cartridge with an elliptical stylus follows the record groove more accurately, and so, produces better sound. Your Radio Shack store has a selection of turntable and changer systems which come with factory-mounted bases and cartridges.

TAPE DECKS



Until very recently, reel-to-reel tape decks were the only possible choice for those interested in true high-fidelity. But recent technological advances have made 8-track and cassette recorders approach the sound quality of reel-to-reel machines.

Reel-to-reel decks are a must for those who want to edit their own tapes, and they still have marginally the best performance.

The best cassette decks, equipped with special tape bias settings and noise reduction circuitry, will out-perform many reel-to-reel decks. They have the additional advantage of compactness and convenient pop-in loading. In addition, cassettes can be used in the car as well as at home.

8-track cartridges provide slightly less fidelity than cassettes or reels but have several advantages. An 8-track recorder plays pre-recorded car tapes at home and can save money by recording new auto tapes. In addition, an 8-track cartridge uses a continuous tape loop which can provide hours of uniterrupted music. Many 8-track playback decks are less expensive than record changers and let you use car tapes at home.

HEADPHONES

Any system can benefit from a good pair of stereo headphones. They provide convenient private listening and many people find the heightened stereo very exciting.

Your STA-111's front-panel headphone jack will accept any low impedance stereo headphones. When shopping, wear each pair of headphones long enough to be sure they will be comfortable.

ANTENNAS

To obtain the superior performance your Receiver's FM section is capable of producing, you should use an external/outside antenna. See HINTS FOR BETTER SOUND.

REALISTIC®

OPERATING THE STA-111

BEFORE PLUGGING UNIT IN:

1) Double-check all connections.
2) Set **VOLUME** to "0".
3) All **push-buttons** should be out.

Plug the Receiver's power cord into a wall outlet and press the appropriate **SPEAKERS** button to connect a pair of speakers.

Press **POWER** to turn the unit on.

SPEAKERS/HEADPHONES

Press **A** or **B** (or both) **SPEAKERS** buttons, for private listening, release **SPEAKERS** buttons by pressing again and plug in a pair of low impedance headphones into **PHONES.**

INPUTS

Choose the input you want by pressing the one of the **MODE** button.

AM/FM Reception

Press **POWER** on.
Press the **AM, FM** or **FM MUTE** button in. When **POWER** is first turned on, the frequency display will show the lowest frequency on the band [530 kHz for AM (522 kHz for European/ Australian models) or 87.9 MHz for FM (87.50 MHz for European model)].

In normal use, your STA-111 will show the frequency of the last station you tuned to.

Normally you'll use **FM MUTE** when listening to FM. If you want to listen to weak or distant FM stations, press **FM** button.

Automatic (Search) Tuning

Press the **SEARCH** button in and press **TUNING** button either "up" (>) or "down" (<).
The Receiver will tune automatically until a station is found.
If this station is not desired, press button "<" or ">" again to continue searching.
When the band-end is reached—either highest or lowest—the Receiver automatically starts over searching at the opposite end.
The Auto Tuning will only stop at strong signals on AM and FM. If you want to tune weaker stations, you will have to tune manually. Press the **SEARCH** button again to manual (out) position for manual tuning. You'll have to use "FM" mode, not "FM MUTE", when you want to tune to weaker FM station. You may find weaker FM station noisy. To improve quality, press **MPX FILTER**. If the station is still noisy, press **MONO** button (This will leave the fidelity unimpaired, but the signal will no longer be stereo).

Manual Tuning

Set the **SEARCH** button to Manual (out) position. Press "up" (>) or "down" (<) switch to advance the frequency up (or down) one step [200 kHz on FM, 10 kHz or AM (50 kHz on FM, 9 kHz for AM for European/ Australian models)]. Hold the button down to automatically step the frequency up (or down) rapidly.

When you are near the frequency of the station you desire, release the button and press it momentarily till you reach the desired station. Advance too far? No problem—just press the other end momentarily to "back up" to the station you want.

If a band-end is reached while tuning, the tuner starts over tuning at the opposite band-end.

How to set the Memory

A total of 12 frequencies can be set into the STA-111's memory (six for FM, six for AM).

1. Tune to an FM or an AM station as mentioned in "Automatic Tuning" or "Manual Tuning" paragraph.

2. Press the **MEMORY** button.
   The MEMORY indicator LED will be lit.

3. While the MEMORY indicator is on, press one of Memory buttons. This will store the station in the memory and the Memory indicator above the button will light.

4. Repeat steps 2 and 3 until all the stations you want are set into the memory.

5. Select the other band (AM or FM) and repeat as above for six more frequencies.

Want to change the stations you've stored in Memory?

Simply add new stations as in steps 1-5 and old ones are automatically erased.

REALISTIC®

Tuning to a memory station

To tune a frequency programmed into Memory, just press the desired Memory button, 1 through 6.

If Receiver is set to AM, you'll receive an AM frequency. If in the FM or FM MUTE mode you'll receive an FM frequency.

NOTE: When Receiver is unplugged, a built-in Time Constant circuit will keep the pre-set frequencies in Memory for approximately two days. If the Receiver is unplugged for more than two days, you'll have to re-enter stations into Memory.

VOLUME

Adjust **VOLUME** for a pleasant listening level.

BALANCE

If necessary, adjust **BALANCE** for best separation and channel balance, or to compensate for slightly off-center listening positions.

Tone

The three separate tone controls give you complete control over your system's sound. The controls have no effect on the sound in their center positions. Each boosts its tone range when turned clockwise and de-emphasizes its range when turned counterclockwise. Each of the Tone controls adjusts both channels equally.

The **BASS** control varies the low frequencies while **TREBLE** controls the high frequencies. The **MIDRANGE** (often called "presence") is not found on most receivers. To hear its maximum effect, listen to a record, tape or broadcast with a vocalist. By turning the **MIDRANGE** clockwise, you can bring the vocalist "up front", or by turning it counterclockwise you can move the singer back into the ensemble.

LOUDNESS

When listening at low volumes, press the **LOUDNESS** button. This overcomes the ear's reduced sensitivity by boosting both bass and treble at low volume levels.

MONO

Pressing the **MONO** button defeats stereo operation. The resulting signal is a composite (left + right). Use **MONO** for monaural sources (old records, TV sound, Ham Radio, etc.) Leave out for Stereo.

HIGH FILTER

Press the **HIGH FILTER** button to filter out hiss and scratches. For normal operation, leave the filter out.

TAPE MONitor

Press the **TAPE MONitor** button in to play tapes or (with a three-head deck) to listen to tapes immediately after they have been recorded.
IF NO TAPE IS BEING PLAYED, PRESSING THIS BUTTON WILL SILENCE THE RECEIVER.

REALISTIC®

HINTS FOR BETTER SOUND

Placing Your Speakers

Where you put your speakers is a highly personal matter, depending on how your room is arranged and how you listen to music. Before settling on a final arrangement, try several.

Since the SYSTEM ELEVEN is so compact, the typical location will be on a shelf, book case or table. If you place the system on a shelf, try positioning the speakers towards the front, in the center or near the back of the shelf. Or, the MINIMUS-11/MINIMUS-7 can be mounted right on a wall (a bracket is provided for this purpose).

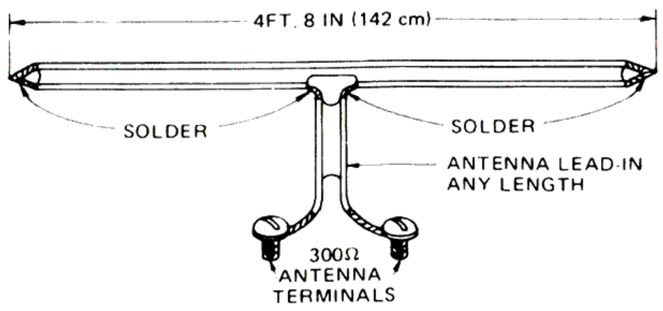
Each position will affect the bass response of the system. Use the location which gives the most pleasing sound. Positioning the speakers in front of a hard wall vs a "soft" wall (covered with curtains, or cork background, etc.) will also have a great effect on the sound.

If you install the speakers on a shelf in an enclosed bookcase, it is better to position them close to the forward edge of the shelf. If the shelf has an open back and is not near a wall surface, location won't be quite as important.

Normally, stereo speakers should be 6 to 8 feet (1.8 to 2.4 meters) apart. Speakers too close together have inadequate stereo separation, while placing them too far apart creates a "hole in the middle". Since most speakers have a tweeter dispersion of about 60° your listening should ideally be in the "overlap" between the speakers. You may want to angle the speakers toward you for better stereo.

ANTENNAS

As supplied, your Receiver comes with a convenient FM Line Cord Antenna connected to one of the screws on the back. This is intended to be just a temporary antenna. To realize the full capabilities of your FM system, you must use an external/outside antenna. To use another antenna, loosen the screw and release the Line Cord Antenna. You can build a simple folded-dipole antenna illustrated below and connect it to the 300 Ω terminals. An assembled folded-dipole antenna is available from Radio Shack, Catalog Number 42-2385.

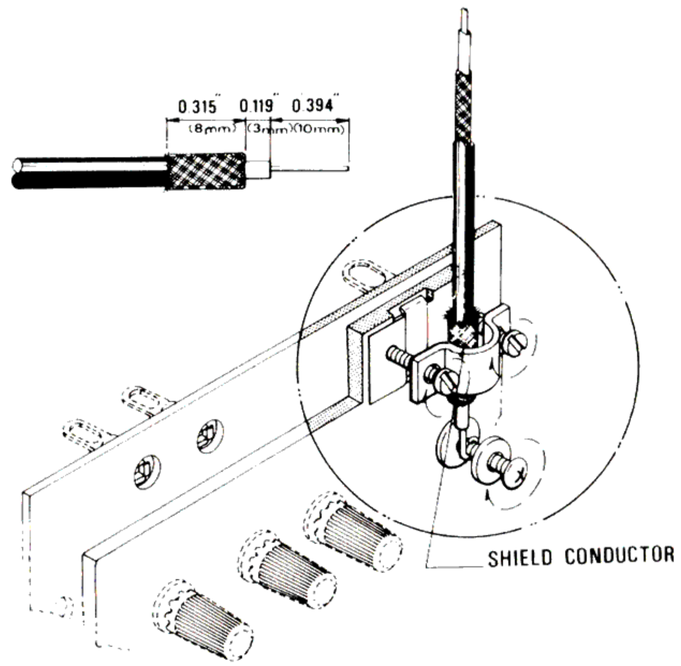


FM DIPOLE ANTENNA

As of VHF-TV rabbit ears or ones made specially for FM reception work well in suburban areas. Some deluxe models feature electronic "tuning" for better directionality. Connect such antennas to the 300 Ω terminals.

An outside TV antenna will provide excellent FM reception. Use an inexpensive "splitter" and you can make connections for both TV and FM from the same antenna. See your Radio Shack store for a "splitter". Connect directly to the 300 Ω terminals.

For the very best FM reception, use an outdoor antenna designed specifically for FM reception. Such an antenna can pick up stations up to 175 miles (280 km) away over flat terrain. Your local Radio Shack has a full line of FM antennas and accessories.



75-ohm coaxial lead-in

REALISTIC®

Many modern homes and apartments have built-in 75 Ω TV/FM antenna systems and outlets. Most new color TV sets use 75 Ω lead-in cable; thus many antennas are set up for 75 Ω. In these cases, make FM antenna connections to the 75 Ω terminals. (Attach the braided ground wire of 75 Ω lead-in to the terminal common to the 75 Ω and 300 Ω antenna terminals or connect the braid under the clamp as illustrated.)

The built-in loopstick antenna provides excellent AM reception. If you want even better AM reception, install an outdoor antenna [50 feet (16 m) or more]. Mount the antenna high above ground, away from surrounding building **and away from power lines.** Connect a wire between the antenna and the AM antenna screw. Or, use one of the AM/Short wave Antenna kits available at your local Radio Shack store (Catalog Number 278-758).

NOTE: Move around the built-in AM loopstick antenna for best AM reception.

CARING FOR THE STA-111

Clean the metal parts of the front panel and the dial face with a soft, damp cloth (do not use abrasives or solvents).

Ventilation—can be important. We merely recommend that you don't place the STA-111 on a surface which would block air circulation—air must be able to circulate freely around the back, under and over the top of the case. Avoid placing on a shag rug, etc. which would block such circulation.

BUILT-IN PROTECTION CIRCUITS

Your Receiver has built-in thermal overload protection. That means that it can not become abnormally hot and damage some portion of the circuitry. If internal temperatures do rise abnormally, the Receiver will automatically silence itself. If this happens, check to be sure you have not placed something over the ventilation holes—if you have, remove it.

In addition, the STA-111 is protected against overdriving. So if you are using speakers with excessively low impedance (e.g., two pairs of 4-ohm speakers), or if a short occurs across the speaker outputs, the amplifier's output stages will be silenced or cut back (to prevent overdriving and possible damage).

In any case, if the STA-111 does turn itself off, turn POWER off, check ventilation and then check to be sure your speakers are properly connected and that you are not using a combination of 4-ohm speakers for both main and remote. If the protective circuit was triggered by temperature, it may take a few minutes for the circuitry to cool down and allow the unit to come back on. If the Receiver does not come back on, you may have to wait a few more minutes for everything to cool adequately—it should never take more than about 20 — 30 minutes for this cool down cycle.

If You Have Problems ...

We hope you don't; but if you do, here are some suggestions:

1. Check all your cable connections. Make sure all the leads and plugs are secure at both ends.

2. Try a different AC outlet if you don't get any indication of power (and be sure you've got the line cord plugged in).

3. Try interchanging cables and connections on the rear panel—sometimes this will give you a hint of where the problem lies—and may solve the problem for you.

4. If frequency display and **SIGNAL** indicator works—but you have no sound—make sure you didn't leave **TAPE MON**itor button in.

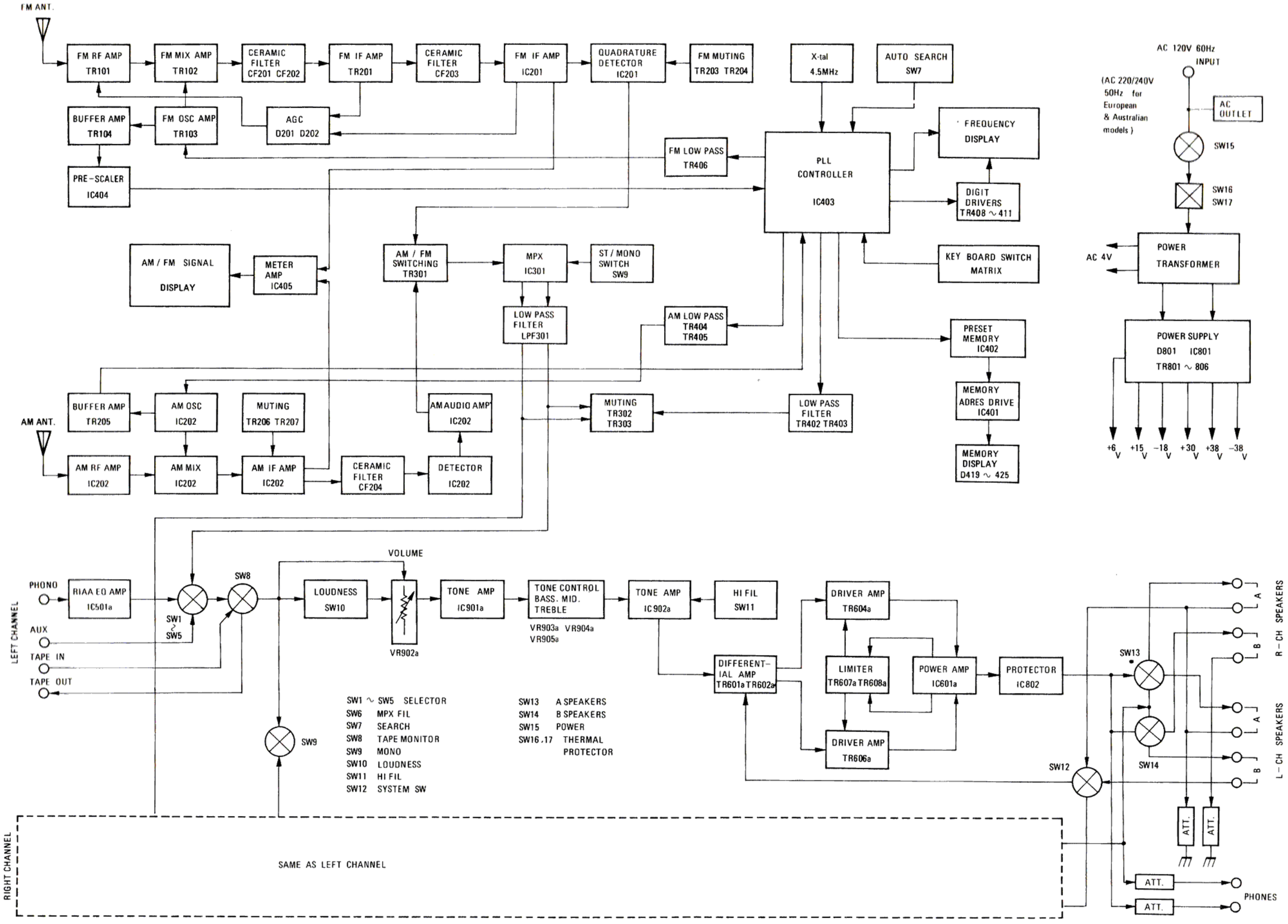
   If that is not the case—maybe the automatic overload protection circuit has activated. In such a case, turn **POWER** off and check your speaker connections.

   A. Make sure there is no short across the speaker push terminals (stray strand of wire touching between terminals or to the metal chassis).
   B. If you are using more than one pair of speakers, they must be 8 or 16 ohm type (two pair of 4 ohm speakers can overload the amplifier circuit and cause this circuit to activate).
   C. Let the Receiver cool down for a few minutes and then turn POWER back on.

In any case, if none of the above does the job and you still have a problem—help is as close as your local Radio Shack store. Bring your unit in and be ready to describe the symptoms—we will get you back into good stereo sound ASAP!

REALISTIC®

BLOCK DIAGRAM



REALISTIC®

SPEAKERS—FOR THE MUSIC MINDED

For years Radio Shack has been known for its line of speakers. Back in the days when speakers often were priced higher than a good receiver—Radio Shack brought out the Optimus line which proved a speaker didn't have to be expensive to sound expensive.

And today, we are *THE* place to go for speakers. Whether you are looking for a real-wood piece of furniture that sounds good or just a small book-shelf-type.
Everything from our big sound Mach One to our sophisticated Optimus T-200 to our handsome MC2001.

Our rave-reviewed SYSTEM-7 MINIMUS-7 Speaker now has a slightly bigger brother, the MINIMUS-11 ... ideally suited to our STA-111, Exceptional appearance, exceptional sound—**MINIMUS-11/SYSTEM-11**.

MACH™ SERIES

MINIMUS-7

MINIMUS® SERIES

MINIMUS-11

OPTIMUS® SERIES

Mach One

MC-2001

NOVA®-10

T-200

REALISTIC®

AUSTRALIA
280 316 VICTORIA ROAD
RYDALMERE N.S.W 2116

BELGIUM
PARC INDUSTRIEL DE NANINNE
5140 NANINNE

U K
10-12 FLOOR, TAMEWAY TOWER
BRIDGE STREET, WALSALL
WEST MIDLANDS, WSI ILA

RADIO SHACK, A DIVISION OF TANDY CORPORATION: U.S.A.: FORT WORTH, TEXAS 76102: CANADA: BARRIE, ONTARIO L4M 4W5

Printed in Singapore