In choosing this fine Realistic product you have demonstrated a rather acute awareness of "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. Our Realistic Electrostat-3® electrostatic tweeter was called a "best buy" by the country's leading product-review magazine. Our 10TRF radio out-performed practically anything then available. And dealers from all over the world began requesting a Realistic franchise.

"Firsts" include: the first medium cost DC/AC communications receiver totally engineered in solid state—the Realistic DX-150A; the first properly designed low-cost police band radio—the Realistic Patrolman; the Realistic Optimus-1 loudspeaker, bringing "over $120 sound" down 33%; the first lifetime-guaranteed vacuum tube; and the Realistic STA-120B stereo receiver which combined massive power, modern styling, and a veritable host of new ideas—at a cost fully $100-$200 below its value under traditional marketing practices.

But of course!—Realistic marketing practices are NOT traditional. First: the line is restricted in distribution. Second: we do not have sales representatives and other normal "trade" costs, nor do we waste money and tools on frequent model changes to attract new dealers—a new model is a NEW model, a current model is one that gets a steady stream of improvements at no cost to you and without a lot of wild (and expensive) claims of novelty.

REALISTIC AUDIO PRODUCTS are the proud result of Radio Shack engineering, research, development, and over 50 years of experience in electronics. Laboratories and major testing facilities are maintained in Fort Worth, Los Angeles, Boston, Columbus Ohio, Burlington Iowa, Toronto and Tokyo. In every sense a national brand, the Realistic label is worn with equal distinction by our highly original Communications and Citizens Band (two way radio) products, and numerous other items, including: tape, headphones,
INTRODUCTION

Your new STA-84 is a highly versatile AM/FM Stereo Receiver which delivers enough power to drive almost any speaker system. The "honest" 25 watts per channel over the entire audio bandwidth will drive both "main" and "remote" speakers. And it has the performance and convenience features that distinguish a truly great receiver.

- Built-in Quatravox® synthesizes 4-channel sound from ordinary stereo sources. Whenever you’re ready, just add a second set of stereo speakers for the rear channels. It’s the best of both worlds—stereo and 4-channel.

- With the FM tuner, the specifications tell the story. There’s an FET front-end for excellent sensitivity and reduced noise. When you tune, muting eliminates interstation hiss.

- Our exclusive Auto-Magic® dramatically simplifies FM tuning. When you touch the tuning knob, it lets you dial stations easily. Then as you release the knob, Auto-Magic fine-tunes the station and locks it in for drift-free listening.

- The wideband tuner provides maximum AM fidelity.

And there are a lot of "little things" that show you how carefully we designed the STA-84. Things like easy-to-use Glide Path™ volume controls and a separate pushbutton power switch so you don’t have to reset the volume every time you turn the receiver on.

At Radio Shack we also believe a receiver should look as good as it sounds. So we built the STA-84 with a blackout dial and a dial pointer that changes from yellow to red to indicate stereo broadcasts. Like every Realistic component, the STA-84 comes with a beautiful genuine walnut case—and it doesn’t cost you a penny extra:

RADIO SHACK LIMITED WARRANTY

This equipment is warranted 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

SPECIFICATIONS

AMPLIFIER

Audio Output Power at no more than 0.7% Total Harmonic Distortion into 8 ohms, over the audio spectrum, 20 ~ 20,000 Hz (minimum RMS power, both channels driven)

Input Sensitivity
  Phono
  Aux
  Tape

Frequency Response
  20 ~ 20,000 Hz ± 2 dB

IM Distortion
  0.5% (at 15 watts)

Signal-to-Noise Ratio
  60 dB (Phono)
  70 dB (Aux)

FM TUNER

Sensitivity
  2 μV (IHF)

Capture Ratio
  2 dB

Signal-to-Noise Ratio
  65 dB

Total Harmonic Distortion
  Mono
  0.5%

Stereo
  0.8%

Image Rejection
  50 dB

Selectivity
  45 dB

Separation at 1000 Hz
  35 dB

AM TUNER

Sensitivity
  250 μV/m
  (for 20 dB S+N/N)

Image Rejection
  35 dB

POWER REQUIREMENTS

120 VAC, 60 Hz
(220/240 VAC, 50 Hz for European and Australian models as indicated on rear of unit)

NOTE: Before operating your STA-84 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.
CONTROL FUNCTIONS

SELECTOR
Chooses one of five input positions.

AUX — For any high-output source—a second tuner, a crystal or ceramic phono cartridge, a second tape deck, TV, Ham radio, etc.

PHONO — For any turntable equipped with a magnetic cartridge.

FM — Activates the built-in FM tuner.

FM MUTING — Activates the built-in FM tuner and eliminates interstation hiss.

AM — Activates the built-in wideband AM tuner.

MONO
When pressed in, switches the amplifier and tuner from stereo to monaural operation. In the out position, the amplifier operates in stereo and the FM tuner automatically switches to stereo when there is a stereo signal.

TAPE MONitor
Push in to play tapes or to monitor a tape as it is being recorded.

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

AUTO-Magic
When pressed in, special circuitry simplifies FM tuning. With the button out, FM tuning is manual.

PHONES
Accepts any pair of low impedance stereo headphones. The jack is always "live".
LOUDNESS
With the button in, boosts low frequencies to compensate for the ear’s reduced sensitivity to bass at low volume. Radio Shack’s exclusive Perfect Loudness adds just the right amount of compensation at every listening level. With button out, removes the compensation.

TREBLE
Controls high frequencies. At the center position, it does not affect the sound. Turn clockwise to boost treble response, counterclockwise to de-emphasize the high frequencies.

POWER
Turns the receiver on when pushed in—off when pushed a second time.

LEFT and RIGHT VOLUME
Adjusts volume and balance.

Tuning Knob
Tunes AM and FM stations. In the Auto-Magic mode, touching the knob changes the TUNING meter light from blue to white and permits easy FM station selection.

TUNING Meter
Indicates the relative strength of FM and AM signals. Tune for the highest reading.

Dial Pointer
Lights yellow when listening to AM or FM. The pointer turns red when the STEREO/MONO button is out and there is an FM stereo signal.

Blackout Dial
Lights whenever the receiver’s power is on.

SPEAKERS
OUT — Turns all speakers off for private headphone listening.
A — Connects main speakers only.
B — Connects remote speakers only.
A+B — Connects main and remote speakers.
Q-VOX — Synthesizes 4-channel sound. “A” speakers become front channels, “B” speakers are rear.

BASS
Controls low frequencies. At the center position, it does not affect the sound. Turn clockwise to boost bass response, counterclockwise to de-emphasize the low frequencies.
1. **AC Cord** — Supplies the receiver's power. Plug the cord into any 120 VAC, 60 Hz outlet (220/240 VAC, 50 Hz power where the sets are so marked on the rear for European and Australian models.)

2. **POWER FUSE** — Protects the receiver from voltage surges, short circuits and other abnormal operating conditions. If the dial light does not go on when POWER is on, check the fuse. If it is blown, replace it with an identical size and value (2A).

3. **UNSWITCHED Convenience Outlet** — Powers any audio accessory up to 200 watts. The front panel POWER switch does not affect this receptacle.

4. **A (FRONT) SPEAKERS Screw Terminals** — Powers main/front speakers which do not have phono jack connectors. NOTE: Use either phono jack or screw terminals for A speakers, not both.

5. **A (FRONT) SPEAKERS Phono Jacks** — Connects to speakers with phono jack connectors. NOTE: Use either phono jacks or screw terminals for A speakers, not both.

6. **B (REAR) SPEAKERS Screw Terminals** — Powers remote/rear speakers.

7. **TAPE OUT** — Permits tape recording any source chosen by the SELECTOR. The output from these jacks is unaffected by the front panel controls.

8. **TAPE IN** — Accepts output from any tape deck or recorder for tape playback.

9. **AUX** — Accepts output from any high-level source—a second tape deck or tuner, a ceramic or crystal phono cartridge, etc.

10. **PHONO** — Accepts output from any turntable equipped with a magnetic cartridge. These jacks are active when SELECTOR is set to PHONO.

11. **PHONO GND** — Accepts the green or black ground wire found on most turntables. Making this “ground” connection reduces or eliminates hum.

12. **Built-in adjustable ferrite AM antenna** — Is adequate for most areas for AM reception. Adjust for best reception.

13. **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.

14. **FM ANTenna 75Ω Screw Terminals** — Connect antennas using 75-ohm coaxial lead-in to these screws; connect the shield wire to the “G” (ground) screw. Coaxial cable provides extremely high resistance to static and other noise.

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

16. **FM Line cord Antenna** — Connect to the 300Ω FM screw terminal illustrated to provide FM reception in most metropolitan areas. Disconnect the line cord antenna when attaching an external FM antenna.
CONNECTIONS

BEFORE MAKING CONNECTIONS:

1. Do not plug in the receiver's power cord.
2. Be sure the POWER button is out ("off" position).

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

SPEAKERS

The STA-84 has two sets of A (main/front) speaker outputs — use only one set. If your speakers have phono plug inputs, use the receiver's phono plug outputs and a set of unshielded speaker cables. Otherwise use the receiver's screw terminal outputs.

For maximum bass response, be sure to observe proper phasing. Connect the + Receiver speaker output to the speaker terminal labeled A, 1 or +; and the — output to the speaker terminal labeled B, 2 or —. Most speaker wire is marked with a ridge along one conductor or has one color-coded conductor. If you use preassembled phono plugs, phasing will automatically be correct.

Connect B (remote/rear) speakers following the instructions above. Be sure the speakers are phased properly.

NOTES: 1. The STA-84's outputs are designed for 4-16 ohms speakers. However, when more than one set of speakers is being connected, use only 8-16 ohms systems. This will prevent the amplifier from being overloaded.
2. When using the screw terminals, be sure no stray strands of wire touch a second terminal or the chassis—a harmful short could result.
3. Connect no more than two sets of speakers to the receiver.
4. Use only as much wire as necessary to connect the speakers.

If you are using 4 ohm speakers, connect only one set of speakers, or use only one set of speakers at a time. That is, don't use A+B or REAR/QUATRAVOX if one set is 4 ohms. Low impedance speaker systems will tend to trip the automatic circuit protection/amplifier shut-down circuitry when operating at high volume levels (to prevent damage from amplifier overdrive).

TURNTABLE

Connect the turntable leads to the PHONO MAG inputs. If the turntable has a ground wire (usually green or black), connect it to the PHONO GND screw. Plug the turntable's power cord into an AC outlet or the receiver's UNSWITCHED convenience outlet.

(NOTE: If the turntable has a ceramic or crystal cartridge, connect it to the AUX jacks.)

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

Be sure the line cord FM antenna is connected to the FM ANT 300Ω terminal. The built-in AM antenna requires no attention.

If you think you need an external antenna, see HINTS FOR BETTER SOUND.

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.
CHOOSING THE REST OF YOUR SYSTEM

SPEAKERS

No stereo system sounds better than its speakers, so choose the best you can afford for your front or main speakers. With a high quality receiver like the STA-84, you should carefully consider Radio Shack's Optimus and Nova-series speakers. To be able to hear your new receiver's superior performance, we recommend one of the Minimus or Electrostat speakers as a minimum investment.

Ideally your rear channel speakers for Quattravox should be identical to your front speakers. This assures a perfect tonal match and makes it easy and inexpensive to convert to one of the discrete 4-channel systems whenever you're ready. However, it is possible to enjoy the added spaciousness of Quattravox with an inexpensive set of rear speakers like Radio Shack's Solo-series.

Of course there are a wide variety of speakers intended primarily for remote use. Some are weather-proofed for outdoor installations and others offer the convenience of a built-in volume control. Naturally, if you plan to use your remote speakers for critical listening, you should consider using the same type of speakers for both your main and remote installations.

Your nearest Radio Shack has complete selection of speakers for every application and budget.

TAPE DECKS

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

Reel-to-reel decks are 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 uninterrupted 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-84'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

Under most conditions your receiver's built-in antennas should provide adequate AM and FM reception. If you have difficulty see HINTS FOR BETTER SOUNDS.
BEFORE PLUGGING IN THE STA-84

1. Double-check all connections — especially the speaker connections—to assure that all connections are firm and that there are no shorts.

2. Set the VOLUME controls to “O” (minimum).

3. All pushbuttons (including POWER) should be out.

OPERATING THE STA-84

SPEAKERS/HEADPHONES

Select any speaker or combination of speakers with the SPEAKERS switch. In the A position, the receiver’s power goes to the main/front speakers only and in the B position to the remote/rear speakers only. A + B puts the same stereo signal through both sets of speakers. In Q-VOX, a 4-channel synthesizer turns the A and B speakers into the front and rear channels of a simulated quadraphonic program.

The PHONES jack permits headphone listening with any or all of the speakers. For private listening, turn the SPEAKERS switch to OUT.

POWER

Press POWER button in to turn the receiver on. Press a second time to turn the receiver off.

VOLUME

Adjust the Left and Right VOLUME controls for a comfortable listening level. If you are slightly off-center from the two speakers you may need to “balance” the system. To do this, adjust the VOLUME controls separately until the sound of a mono source seems to come from a point midway between the two speakers. (See MONO below.)

SELECTOR

Choose the input you want by turning the SELECTOR switch.

AUX — Adjust VOLUME, BASS and TREBLE for best sound.

PHONO — Put on a record and adjust the front-panel controls for best sound.

FM — Use the Tuning knob to select a station. Tune for the highest reading of the TUNING meter or use Auto-Magic (see below). If the station is broadcasting stereo, the dial pointer will turn red. Adjust the front-panel controls for best sound.

If the signal is noisy, try either or both of these solutions:
1. Press the HI-FIL button. (This will filter out some treble, but the signal will still be stereo.)
2. Press the MONO button. (This will leave the fidelity unimpaired, but the signal will no longer be stereo.)

FM MUTING — Use as FM (above) but a special circuit eliminates interstation hiss. When listening to very weak stations, it may be necessary to set the SELECTOR to FM.

AM — Use the Tuning knob to select a station. Tune for the highest reading of the TUNING meter. Adjust the front-panel controls for best sound.

NOTE: If the TAPE MONitor button is pressed in, the SELECTOR switch will have no effect on the sound.

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.
BASS
Turn the BASS control toward MAX to boost the low frequencies or toward MIN to de-emphasize them. In the center position, the control has no effect on the sound.

TREBLE
Turn the TREBLE control toward MAX to boost high frequencies or toward MIN to de-emphasize them. In the center position, the control has no effect on the sound.

MONO
Press the MONO button to defeat normal stereo operation. The result is a composite signal (left + right). When you listen to weak FM stereo stations, pressing the MONO button will reduce the hiss, but the signal will no longer be stereo.

HI-FIL ter
Press the HI-FIL button to filter out hiss and scratches. For normal operation, leave the filter out.

LOUDNESS
When listening at low volume, press the LOUDNESS button. This overcomes the ear’s reduced sensitivity to bass at low volume by boosting the low frequencies. Radio Shack’s exclusive Perfect Loudness™ adds just the right amount of bass boost at every listening level.

AUTO-MAGIC
Tuning with Auto-Magic
Turn the SELECTOR to FM or FM MUTING and press the AUTO-M button in.

When you touch the Tuning knob with your hand, you’ll notice that the TUNING meter changes from blue to white. Special, advanced circuitry automatically senses your touch and releases the station you were listening to so you can tune another one easily.

Just turn the Tuning knob until you hear the station you want—there’s no need to fine-tune. When you release the knob, the TUNING meter will turn blue again as Auto-Magic fine-tunes the station with electronic precision and locks it in for drift-free listening.

Tuning Manually
If you are trying to listen to a weak station located between two very strong stations, it may be necessary to tune manually.

With the AUTO-M button out, adjust Tuning until you find the station you want. Now fine-tune for the highest reading of the TUNING meter.

Thermal Protection
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. If you are using speakers with excessively low impedance, the amplifier circuit may be over-driven and thus producing excessive heat. This can be caused by using 4 ohm speakers on main and remote—if you use remote with main speakers, be sure to use either 8 or 16 ohm speakers.

In any case, if the Receiver does turn itself off, press 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. The protective circuit is triggered by temperature, thus it may take a few minutes for the circuitry to cool down and allow the unit to come back on. If everything is OK, turn power 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, or, check the fuse (2A, 125V) on the rear panel. Replace only with the same size and rating.
HINTS FOR BETTER SOUND

QUATRAVOX

One of the STA-84's outstanding features is its built-in Quatrvox circuitry. Quatrvox synthesizes 4-channel sound from almost any stereo source—discs, tapes and FM broadcasts take on a rich, new, spacious sound like you've only heard at live performances.

And it's not a trick — Quatrvox actually recovers the important ambient (reflected) sound hidden in ordinary stereo playback. When this reflected sound is channeled through the rear speakers, it helps recreate the acoustics of the studio or concert hall where the recording was made. That makes your system sound more realistic—and after all, that's what hi-fi is all about.

NOTE: Quatrvox will reveal astounding 4-channel effects in some programs and very little in others. It all depends on the recording techniques used and the acoustics of the studio or concert hall.

POSITIONING YOUR SPEAKERS

Where you put your speakers is a highly personal matter, depending largely on the arrangement of your listening room and the way you listen to music. Where you put your speakers does make a difference in how your system will sound, so before settling on a final arrangement, try several alternatives.

Bass response is highly dependent on speaker location. For maximum bass, place the speakers in the corners of your room. Putting the speakers directly on the floor will make the bass even stronger. If the bass sounds boomy and exaggerated, move the speakers away from the corner slightly, pull them out from the wall a little or raise them 6 to 18 inches (15–45 cm) of the floor.

Stereo

Stereo speakers should be 6 to 8 feet (1.8–2.4 m) apart. Putting them too close together reduces the stereo effect, while placing them too far apart reduces bass response and creates a "hole in the middle". Also, most speakers have a tweeter dispersion angle of about 60°. Ideally your listening position should be in the overlap, so you may want to angle the speakers toward you for better stereo.

Quatrvox

The theoretically ideal position is shown in Figure A — one speaker in each corner of the room. Since this arrangement is frequently impractical, you may want to modify it. Figure B shows a common living room arrangement. The listener faces the two front speakers while the rear speakers face each other.

Figures C and D produce a different type of sensation. Instead of being surrounded by sound, the two rear speakers create a sense of depth — as if you were sitting in the audience at a live performance. Depending on the size of your room and the efficiency of the rear speakers, you may want them to face you or to face each other.

There are almost an infinite number of satisfying Quatrvox arrangements, so if one of these doesn't suit your needs, invent your own.
ANTENNAS

Under most conditions your STA-84's built-in antennas should be adequate for AM and FM reception. If you are not satisfied with the reception, try one of the arrangements listed below.

A set 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.

![Antenna Diagram]

An outside VHF-TV antenna provides excellent FM reception. An inexpensive "splitter" permits you to connect a TV set and your Receiver to the same antenna. In fringe areas, a special outdoor FM antenna may be the only solution. Such antennas can pick up stations up to 175 miles (280 Km) away over flat terrain. If you use 300-ohm lead-in, connect it to the 300 Ω terminals and if you use 75-ohm lead-in, connect it to the 75 Ω terminals. (Attach the braid-ground wire of 75-ohm lead-in to the GND terminal). For AM, a long piece of wire hung outdoors between two insulators can greatly improve long-distance AM reception.

NOTE: To protect your receiver use a lightning arrester on any outdoor antenna.

CARING FOR THE STA-84

The STA-84's genuine walnut case looks best when it is polished occasionally with lemon oil. Waxing produces a glossier finish, but can eventually cause a dull wax buildup.

Clean the metal parts of the front panel and the dial face with a soft, damp cloth (do not use abrasives or solvents).
Guaranteed Quality from the builders of the famous ELECTROSTAT-3® TWEETER

NATURAL SOUND  REALISTIC®  SPEAKER SYSTEMS

Optimus® Series

Over 1,000,000 Realistic loudspeakers have been sold in recent years through the nationwide Radio Shack chain. Since the development of its widely acclaimed electrostatic tweeter, Realistic has had an enviable reputation for building good speakers at lower than usual prices. Our Solo, Optimus, Mach, Nova and Minimus Series all have a 5 year warranty. Every speaker is engineered by us, not just “a box with a label”. And though speakers are meant to be heard and not seen, every Realistic speaker is born as beautiful as it sounds. Choose from over 20 different models.

Solo™ Series

Minimus® Series

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