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 "fine" 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 of 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 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

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-800 is a highly versatile AM/FM Stereo Receiver which delivers enough power to drive almost any speaker system. The "honest" 35 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:

- Switchable 25 µs FM de-emphasis lets you decode Dolby* FM broadcasts through standard Dolby NR equipment.
- FM Multiplex circuit is aPhase Lock Loop IC (PLL-IC) which provides rock-stable stereo separation even with temperature changes.
- 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.
- A newly developed phono preamp IC for low noise, low distortion and precise RIAA equalization.
- Direct-coupled high-level stages for solid, distortion free bass response.
- Two built-in electronic protection circuits—one for abnormal speaker loads and one for thermal problems—automatically protect both Amplifier and speakers.
- Glide-Path® volume controls for each channel let you see, as well as hear, your system's balance.
- Full Tape Monitoring facilities.
- At no extra cost—a luxuriously finished real wood cabinet.

* "Dolby" is a trademark of Dolby Laboratories.

NOTE: Before operating your STA-800 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.
SPECIFICATIONS

AMPLIFIER
Audio Output Power at no more than 0.08%. Total Harmonic Distortion into 8 ohms, over the audio spectrum, 20 ~ 20,000 Hz (minimum RMS power, both channels driven)

Input Sensitivity
- Phono: 2.8 mV
- Aux: 180 mV
- Tape: 180 mV

Frequency Response 1 watt
- 30 ~ 20,000 Hz ±1dB

IM Distortion
- 0.2% (at 25 watts)

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

FM TUNER
Sensitivity
- 2 µV (IHF)
- 11.2 dBf

Capture Ratio
- 2 dB

Signal-to-Noise Ratio
- 65 dB

Total Harmonic Distortion
- Mono: 0.3%
- Stereo: 0.5%

Image Rejection
- 50 dB

Selectivity
- 50 dB

Separation at 1000 Hz
- 40 dB

AM TUNER
Sensitivity
- Terminal: 25 µV
- Radiated: 250 µV/m (for 20 dB S+N/N)

Image Rejection
- 35 dB

RF Interference Rejection
- Rated Excellent

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

SELECTOR
Determines the desired input source.

AUX — Activates the pair of AUX jacks on the rear panel. These may be used with any high-level signal source, such as another Tuner, Tape Deck, Ham or CB Radio, TV sound, a turntable with ceramic or crystal phono cartridge, etc.

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

AM — Activates the built-in AM tuner.

FM — Activates the built-in FM tuner.

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

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

FM 25μS
Switches in a special 25μS de-emphasis to let you decode Dolby FM broadcasts (you must also have a Dolby NR component or tape deck with Dolby NR). For normal, non-Dolby FM (or if you do not have a Dolby processor) leave this button in “out” position.

TAPE MONitor
Lets you hear your tapes with push button ease, no matter what the position of SELECTOR. If you have a 3-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 (AUX, PHONO, AM, FM or FM MUTE) 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.

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

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.

PHONES Jack
Plug in stereo headphones for private listening. Leave SPEAKERS switch in the “OUT” position to turn the Speakers off so you don’t disturb others.

Power / SPEAKERS
OFF — Master Power ON/OFF
A — Connects main speakers only.
A REV — Reverses the left/right sound output from the “A” (or Main) speakers.
OUT — Turns all speakers off for private headphone listening.
B — Connects remote speakers only.
A + B — Connects main and remote speakers.

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.

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.

You'll notice that both tone controls are "stepped" for convenient reference (you can always return to a previous setting by referring to the numbered step-positions).

Tuning Knob
Tunes AM and FM stations. In the AUTO MAGIC mode, touching the knob changes the TUNING meter light from white to red and permits easy FM station selection.

LEFT and RIGHT VOLUME
Adjust volume and balance.

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

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

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

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

3. FUSE 2.5A — this is the power supply fuse. It protects the Receiver from voltage surges or other abnormal operating conditions. If the Pilot Light does not go on when POWER is on, check the Fuse; if it is blown, replace with the same size and value.

4. B SPEAKERS Screw Terminals — powers remote speakers.

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

6. A SPEAKERS Screw Terminals — Powers main speakers which do not have phono jack connectors. NOTE: Use either phono jack or screw terminals for A speakers, not both.

7. Built-in adjustable ferrite AM antenna — is adequate for most areas for AM reception. Swing down and move around for best reception.

8. 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.

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

10. FM Line Cord Antenna — Connect to the 300 Ω FM screw terminal illustrated to provide FM reception in most metropolitan areas. Disconnect the line cord antenna when using an external FM antenna.

11. FM ANTenna 75 Ω Screw Terminals — Connect to antenna using 75-ohm coaxial lead-in. Coaxial cable provides extremely high resistance to static and other noise.

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

13. DUB OUT — Permits recording with a second tape recorder.

14. 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.

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

16. AUX — Accepts output from any high level source — another tape deck or tuner, a ceramic or crystal phono cartridge, etc. These jacks are active when SELECTOR is set to AUX.

17. PHONO Jacks — connect Record Changer/Turntable with magnetic cartridge to these jacks. These jacks are active when SELECTOR is set to PHONO.
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
The STA-800 has two sets of A (main) 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 2; and the — output to the speaker terminal labeled B, 2 or 1. Most speaker wire is marked with a ridge along one conductor or has one color-coded conductor. If you use preassembled phone plugs, phasing will automatically be correct.

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

NOTES: 1. The STA-800's outputs are designed for 4-16 ohm speakers. However, when more than one set of speakers is being connected, use only 8-16 ohm 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 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.

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. You can connect a second deck to the DUB OUT jacks for making two recordings at a time.

ANTENNAS
Be sure the line cord FM antenna is connected to the FM ANT 300 Ω terminal. The built-in AM antenna requires no attention. If you think you need an external antenna, see HINTS FOR BETTER SOUND.

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.

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 main speakers. With a high quality receiver like the STA-800, 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 speakers as a minimum investment. 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 similar high quality speakers for both your main and remote installations.

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

TURNTABLE
For convenience, most people prefer a record changer (often called an automatic turntable) to a manual turntable. A changer will play 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 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 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-800'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 normal conditions your Receiver's built-in antennas should provide adequate AM and FM reception. If you have difficulty, see HINTS FOR BETTER SOUND.
OPERATING
THE STA-800

BEFORE PLUGGING UNIT IN:
1) Double-check all connections.
2) Set VOLUME to "0".
3) All push-buttons should be out.

Plug the Receiver into a wall outlet and set the SPEAKERS switch to the appropriate position to connect a pair of speakers.

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 speakers only and in the B position to the remote speakers only. A + B puts the same stereo signal through both sets of speakers. In the A REV position, the left/right sound output from A/Main speakers will be reversed. Sometimes this reversing of channels can give interesting effects from various sound sources.

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

VOLUME
Adjust the Left and Right VOLUME controls for a comfortable listening level. If you are slightly off-center from 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 on next page.)

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.

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.

FM — Use the Tuning knob to select a station. Tune for the highest reading of the TUNING meter or use Auto-Magic (see next page). If the station is broadcasting stereo, the red STEREO LED will light up. 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 a stereo signal will still be stereo.)
2. Press the MONO button. (This will leave the fidelity unimpaired, but a stereo signal will no longer be stereo.)

FM MUTE — 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.

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 “+” to boost the low frequencies or toward “-” to de-emphasize them. In the center position, the control has no effect on the sound.

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

**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.

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

**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.

**AUTO MAGIC**
Tuning with AUTO MAGIC
Turn the SELECTOR to FM or FM MUTE and press the AUTO MAGIC button in.

When you touch the Tuning knob, you’ll notice that the TUNING meter changes from white to red. 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 white 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 tune a weak station located between two very strong stations, it may be necessary to tune manually.

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

**FM 25μS**
For normal FM listening, leave FM 25μS button out. If you want to record a signal being broadcast by an FM station using Dolby NR, press this button in. Then, when you play back the tape, you must use a Dolby Decoder (that is, record with a Dolby-type tape recorder, but with Dolby “off”; then play back with Tape Deck’s Dolby circuitry “on”). If you press the FM 25μS button in when listening to a Dolby FM signal, its sound will be excessively “bright” (too much high-frequency emphasis).

If you have a Dolby NR Decoder, you can connect it to the TAPE IN/TAPE OUT jacks and press in TAPE MON. When an FM station is broadcasting a Dolbyized FM signal, you will enjoy the following advantages (with a Dolby NR Decoder):
- Improved signal-to-noise ratio
- Full program dynamic range, even at high frequencies
- Improved reception in weak-signal areas
TAPE DUBBING
You can make two recordings at one time using the DUB OUT jacks in combination with TAPE OUT. DUB OUT jacks are connected in parallel with the TAPE OUT jacks (both have the same output signal).

BUILT-IN PROTECTION CIRCUITS
Your Receiver has built-in thermal over load 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-900 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 amplifier 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. Also check the fuse (2.5A) on the rear panel. Replace only with the same size and rating.

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. 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.

Bass response is highly dependent on speaker location. For maximum bass response place the speakers in the corners of your room. If the speaker is placed directly on the floor the bass will be even stronger. If the bass seems boomy and exaggerated, move the speakers away from the corner slightly or raise them off the floor 7 to 18 inches (15 to 45 cm).

ANTENNAS
In most metropolitan areas you will find the built-in antennas will provide adequate reception of both AM and FM. However, we have provided screw terminals for connecting external/outside antennas for superior reception.

As supplied, your Tuner comes with an FM Line Cord Antenna connected to one of the screws on the back. If you are going 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 300Ω terminals. An assembled folded-dipole antenna is available from Radio Shack, Catalog Number 42-2386.

FM DIPOLE ANTENNA
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 300Ω 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 300Ω 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.

The built-in loopstick antenna provides excellent AM reception. If you want even better AM reception, install an outdoor antenna [60 feet (18 m) or more]. Mount the antenna high above ground, away from surrounding buildings 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:** Swing the built-in AM bar antenna down horizontally and move around for best AM reception.

---

### CARING FOR THE STA-800

The STA-800's genuine walnut case looks best when it is polished occasionally with lemon oil. Waxing produces glossy 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).

---

### 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 the dial scale lights are on and Meter works** — but you have no sound — make sure you didn't leave TAPE MONitor 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 screw 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.
5. **If the dial lights don't come on,** the fuse may be blown. Check it; replace only with a 2.5 Amp type.

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!
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 bookshelf-type. Everything from our big sound Mach One to our sophisticated Optimus Tower to our handsome Minimus-5.