Cat. No. 19-1217

OWNER'S MANUAL

Please read before using this equipment.

RadioShack®

Your RadioShack BTX-128 CTCSS•VHF Business Band Transceiver is a portable, two-way business radio service transceiver that you can carry almost anywhere. The transceiver is compact and light, making it an ideal choice for your business needs.

Your transceiver has these features:

38-Tone CTCSS (Continuous Tone Control Squelch System) — helps reduce interference from other transceivers which are operating on the same frequency and in the same area.

Built-in VOX — allows hands-free operation of your transceiver using an optional headset and microphone.

Programmable Frequencies — you can program the transceiver to any VHF business band frequency you have a license to use — no crystals to buy!

Rechargeable Battery Pack and Battery Charger — the supplied battery charger lets you conveniently recharge your transceiver's battery pack while it is on the transceiver.

Earphone/Speaker and External Microphone Jacks — let you connect an external earphone or speaker and an external microphone for clearer communications in noisy areas.

Battery Low Indication — the transceiver beeps when the battery pack is low.

Flexible Antenna — provides excellent reception.

Belt Clip — lets you attach the transceiver to your belt or waistband.

The transceiver's preset frequencies are:

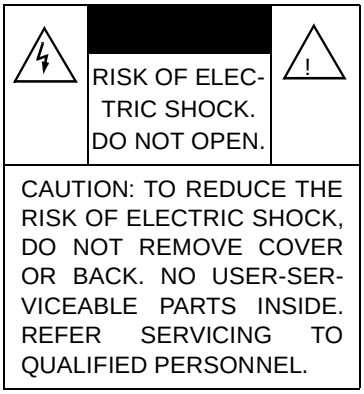
- 151.625 MHz (red dot)
- 151.700 MHz
- 151.760 MHz
- 151.820 MHz
- 151.880 MHz
- 151.940 MHz
- 151.955 MHz (purple dot)
- 154.570 MHz (blue dot)
- 154.600 MHz (green dot)

Note: Some manufacturers identify some business band frequencies by color. These "dot" frequencies are shown above.

We recommend you record your transceiver's serial number here. The number is on the back of the transceiver.

Serial Number _____

WARNING: To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture.



This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the product's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the product's case.

This symbol is intended to inform you that important operating and maintenance instructions are included in the literature accompanying this product.

CONTENTS

FCC License Required

This transceiver is intended for use in the operation of commercial activities, educational, philanthropic, or ecclesiastical institutions, and hospitals, clinics, or medical associations.

The Federal Communications Commission (FCC) requires you to have a license before you operate this transceiver. Unless you are already licensed to operate on one of the preset frequencies, you must apply for a frequency through the PCIA (Personal Communication Industry Association), a non-profit organization that assigns frequencies nationwide to help prevent conflicts between different businesses using transceivers in the same area. For more information about getting a license, contact the PCIA at 800-759-0300, extension 3068 (in Virginia 703-739-0300, extension 3068).

For other questions concerning the license application, contact the FCC at 717-337-1212, or write:

FCC
P.O. Box 1040
Gettysburg, PA 17325

For the latest FCC application form and instructions, call the FCC's fax-on-demand service at 1-202-418-0177 from a fax machine and request one or more of the following documents:

- To receive all forms and instructions, enter 000600
- To receive Form 600 instructions only, enter 006001
- To receive Main Form 600 only, enter 006002
- To receive Form 600 schedules only, enter 006003

If you do not have a fax machine, you can call the Government Forms Distribution Center at 1-800-418-FORM and request that the form and instructions be mailed to you.

FCC Part 90 Rules

You must be familiar with Part 90 of FCC Rules before you operate your transceiver. The operation instructions in this manual conform to Part 90, but do not cover all items in Part 90.

Overall, Part 90 states that:

- You must have a valid license before you use the transceiver.
- As licensee, you are responsible for proper operation of all transceivers operating under your license authority.
- You can let unlicensed persons operate this transmitter, as long as you take precautions to prevent unauthorized transmissions.
- You must use this transceiver only for the commercial use of your business, and only when other commercial channels (such as the telephone) are either not available or not practical.
- You must always yield the operating frequency to communications that involve the safety of life or property.
- You must take reasonable precautions to prevent harmful interference to other services operating on the same frequency.
- You must not transmit program material of any kind used in connection with commercial broadcasting.
- You must not provide a service that is normally handled by telephone or telegraph unless such broadcasts involve the safety of life or property or in emergencies such as an earthquake, hurricane, flood or a similar disaster where normal communication channels are disrupted.
- During each transmission or exchange of transmissions, you must identify your station with the call sign issued to you by the FCC, or once each 15 minutes during periods of continuous operation.
- You must keep a written record of any maintenance or modification made to the transceiver, and you must make this record available for inspection upon demand by the FCC.

Violating any of the provisions of Part 90 can result in fines and/or confiscation of equipment.

Your transceiver might cause TV or radio interference even when it is operating properly. To determine whether your transceiver is causing the interference, turn off your transceiver. If the interference goes away, your transceiver is causing it. Try to eliminate the interference by:

- moving your transceiver away from the receiver
- contacting your local RadioShack store for help

If you cannot eliminate the interference, the FCC requires that you stop using your transceiver.

Additional FCC Regulations

The Business Radio Service is under the jurisdiction of the (FCC). Any adjustments or alterations that would alter the performance of the transceiver so it no longer meets the original FCC type acceptance or would change the frequency-determining method are strictly prohibited.

Replacement or substitution of crystals, transistors, ICs, regulator diodes, or any other component that is of a unique nature with components other than those recommended can violate the technical regulations of the FCC rules or violate type acceptance requirements of the rules.

Before you operate the transceiver, you must obtain your license. It is illegal to transmit without the appropriate license, which you can get by submitting a completed FCC Form 600 to the FCC (or through the PCIA). Furthermore, you are required to understand Part 90 of the FCC Rules and Regulations prior to operating your transceiver. It is the user's responsibility to see that this unit is operating at all times in accordance with the FCC Rules and Regulations.

Exposure to Radio Frequency Energy

The design of your radio, which generates radio frequency (RF) electromagnetic energy, complies with the following national and international standards and guidelines:

- FCC Report and Order FCC 96-326 (August 1996)
- American National Standards Institute (C95-1-1992)
- National Council on Radiation Protection and Measurements (NCRP-1986)
- International Commission on Non-Ionizing Radiation Protection (ICNRP-1866)
- CENELEC

  — Env. 50166-1 1995E - Human Exposure to Electromagnetic Fields Low Frequency (0 Hz to 10 KHz)

  — Env. 50166-2 1995E - Human Exposure to Electromagnetic Fields High Frequency (10 KHz to 300 GHz)

  — Proceedings of SC211/8 1996 - Safety Considerations for Human Exposure to EMEs from Mobile Telecommunications Equipment (MTE) in the Frequency Range 30 MHz–6 GHz (EME - Electromagnetic Fields)

To assure optimal radio performance and to ensure that exposure to RF energy is within the guidelines in these standards, the following operating procedures should be observed:

For hand-held operation: The radio should be held in a vertical position with the microphone one to two inches away from the mouth, and the antenna should be kept one to two inches from the head or body when transmitting.

For body-worn operation: The antenna should be kept at least one inch from the body when transmitting.

ElectromagneticInterference/ Compatibility

Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, de-signed, or otherwise configured for electromagnetic compatibility.

Turn your radio off in any facilities where posted notices instruct you to do so. Hospitals or health care facilities

may be using equipment that is sensitive to external RF energy.

Turn your radio off when on board aircraft when instructed to do so. Any use of the radio must be in accordance with airline regulations or crew instructions.

WARNING

Potentially Explosive Atmospheres

Turn your radio off when in any area with a potentially explosive atmosphere, unless it is a type especially qualified for such use (for example, FMRC Approved). Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

Do not replace or charge batteries in a hazardous atmosphere. Contact sparking may occur while installing or removing batteries and cause an explosion.

Areas with potentially explosive atmospheres are often, but not always, clearly marked. They include fueling areas such as below deck on boats, fuel or chemical transfer or storage facilities, areas where the air contains chemicals or particles such as grain, dust, or metal powders, and any other area where you would normally be advised to turn off your vehicle's engine.

Blasting Caps and Areas

To avoid possible interference with blasting operations, turn your radio off near electrical blasting caps or in a 'blasting area' or in areas posted "Turn Off Two-Way Radio." Obey all signs and instructions.

For Vehicles With an Air Bag

An air bag inflates with great force. Do not place objects, including portable or mobile two-way radios, in the area over the air bag or in the air bag deployment area. If improperly installed or placed wireless equipment is in the air bag deployment area and the air bag inflates, serious injury could result.

Antennas

Do not use a radio with a damaged antenna. If a damaged antenna comes into contact with the skin, a minor burn might result.

Batteries

All batteries can cause property damage, injury, or burns if a conductive material such as jewelry, keys, or a beaded chain touches exposed terminals. The material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

CAUTION

Chargers and Power Cord

To reduce risk of damage to the supplied battery charger when disconnecting it from AC power, pull by the plug rather than the power cord.

Make sure the power cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.

Do not operate the charger with a damaged cord or plug; replace them immediately. Do not operate the charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; contact your local RadioShack store.

Do not expose chargers to rain or snow.

An extension cord should not be used unless absolutely necessary. Use of an improper extension cord may result in a fire or electric shock. However, if an extension cord is used, make sure that:

- The pins and plug of the extension cord are the same number, size, and shape as those on the plug of the charger.
- The extension cord is properly wired and in good condition.
- The cord size is 18 AWG for lengths of up to 100 feet, and 15 AWG for lengths up to 150 feet.

Do not disassemble your charger. If it does not work; contact your local RadioShack store. Incorrect reassembly can result in electric shock or fire.

To reduce risk of injury, use the charger to charge only the type of battery recommended in this Owner's Manual. Other types of batteries might burst, resulting in personal injury or damage.

Use of an attachment not sold or recommended by RadioShack can result in a risk of fire, electric shock, or injury to personnel.

To reduce risk of electric shock, unplug the charger from the outlet before cleaning. Turning off controls does not reduce this risk.

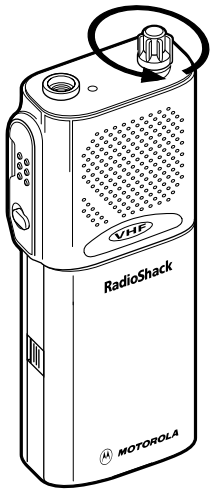
Installing the Battery Pack

The supplied battery pack, when fully charged, provides power to your transceiver for up to 10 hours. You must install the battery pack in your transceiver, then charge it.

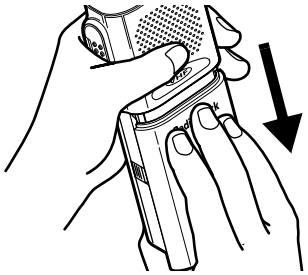
Caution: Do not remove the plastic wrap from the battery pack. Doing so can permanently damage the battery.

Follow these steps to install the battery pack.

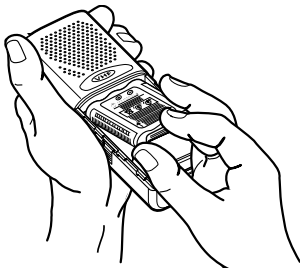
1. Turn the volume control on top of the transceiver fully counterclockwise until it clicks to make sure power is turned off.



2. Unlock the battery compartment cover by sliding both of the cover's latches toward the back of the transceiver until you see the orange tabs underneath the latches. Then slide the cover in the direction of the arrow and lift it off.

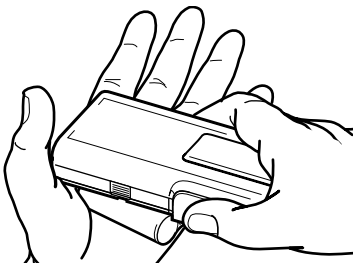


3. With the battery label facing up, align the contacts on the battery pack with the contacts inside the battery compartment. Then press the battery pack into the compartment while applying slight pressure to the bottom of the battery pack.



4. Slide the battery cover back onto the transceiver, then slide both of the latches toward the front of the transceiver to lock it.

To remove the battery pack, unlock the compartment and remove the cover, then turn the transceiver face down and gently tap it into your palm so the battery pack slides out.



Charging the Battery Pack

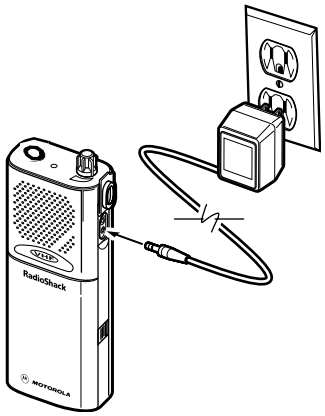
Before you use the battery pack for the first time, you must use the supplied battery charger to charge it for about 16 hours to bring it to a full charge.

You cannot use the transceiver while you charge the battery pack.

Caution: The supplied battery charger was designed specifically for your transceiver. Use only the supplied battery charger.

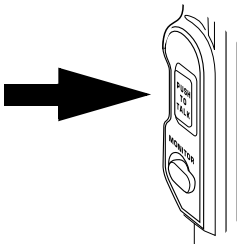
Follow these steps to charge the battery pack.

1. Turn the volume control on top of the transceiver fully counterclockwise until it clicks to make sure power is turned off.
2. Pull out the rubber cover from the charging jack on the side of the transceiver, then insert the charger's 3/32-inch plug into the jack. Plug the other end of the charger into a standard AC outlet.



3. When charging is complete, disconnect the charger from the AC outlet and the transceiver.

When the transceiver beeps about 3 to 4 seconds after you turn it on or each time you release PUSH TO TALK, recharge the battery pack.

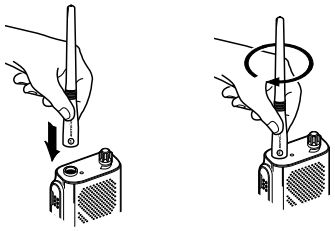


Notes:

- A nickel-cadmium battery pack lasts longer and delivers more power if you occasionally let it fully discharge. To do this, use the transceiver until it beeps when you release PUSH TO TALK.
- To prevent damaging a nickel-cadmium battery pack, never charge it in an area where the temperature is above 113°F (45°C) or below 32°F (0°C).

Important: At the end of a rechargeable battery pack's useful life, it must be recycled or disposed of properly. Contact your local, county, or state hazardous waste management authorities for information on recycling or disposal programs in your area. Some options that might be available are: municipal curb-side collection, drop-off boxes at retailers such as your local RadioShack store, recycling collection centers, and mail-back programs.

Connecting the Antenna

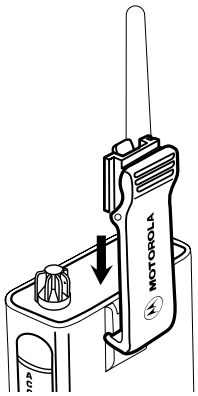


Caution: Always connect the supplied antenna to the transceiver before you use it.

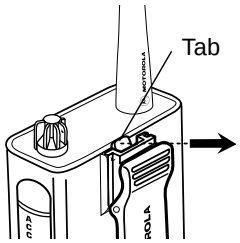
Thread the supplied flexible antenna clockwise into the top of the transceiver to attach it, or counterclockwise to remove it.

Using the Belt Clip

Align the belt clip to the mounting rails on the back of the transceiver, then push the clip down until it clicks to lock it.

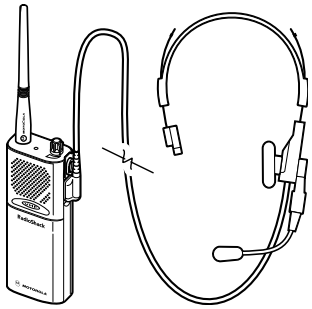


To remove the belt clip, slide it up while pulling the tab toward the clip.



Using an External Speaker/ Microphone

An external speaker/microphone (not supplied) can make it easier to use the transceiver when you clip it to your belt, so you do not have to lift the transceiver to your mouth each time you transmit. Plug the speaker/microphone's plug into the earphone and microphone jacks on the side of the transceiver. This automatically disconnects the transceiver's built-in speaker and microphone.



Listening Safely

To protect your hearing, follow these guidelines when you use an earphone.

- Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.
- Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Once you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

Traffic Safety

Do not use an earphone with your transceiver when operating a motor vehicle or riding a bicycle in or near traffic. Doing so can create a traffic hazard and could be illegal in some areas.

If you use an earphone with your transceiver while riding a bicycle, be very careful. Do not listen to a continuous broadcast. Even though some earphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.

Before you can use your transceiver, you must set your transceiver to a VHF business band frequency you have a license to use. Then you can select a preset CTCSS (Continuous Tone Control Squelch System) frequency and set your transceiver to use it.

Here is what you need to do to set your transceiver to use a business band frequency and CTCSS:

þ Select a business band frequency you have a license to use then set your transceiver to that frequency (see “Selecting a Business Band Frequency” on Page 18).

À Select a CTCSS frequency then set your transceiver to the code that uses that frequency (see “Using a CTCSS Frequency” on Page 18).

Your transceiver’s default CTCSS frequency is 100 Hz. You can select one CTCSS frequency at a time. If you do not want to use a CTCSS frequency, simply do not set your transceiver to use one.

About CTCSS

CTCSS helps eliminate interference between different users of the same frequency, letting you talk and listen to people who are using other transceivers set to the same frequency and CTCSS code. This is like having a subchannel within a channel, giving you greater communication flexibility. When you set a CTCSS code — there are 38 to choose from — and turn on your transceiver’s CTCSS, the transceiver transmits a tone with your transmission, letting you communicate with anyone who has a transceiver set to the same frequency and code. This tone is too low for you to hear, but other transceivers can detect it.

If CTCSS is turned on and set to the same tone on the receiving transceiver, it only receives those transmissions that include the tone. If two different groups operate transceivers in the same area on the same frequency, they do not hear each other’s broadcasts if they both use CTCSS and each select a different CTCSS frequency.

Selecting a Business Band Frequency

1. While holding PUSH TO TALK, turn on the transceiver. You hear “frequen-cy” and the current frequency setting (“frequency nine,” for example).
2. Choose a business band frequency from the following table.

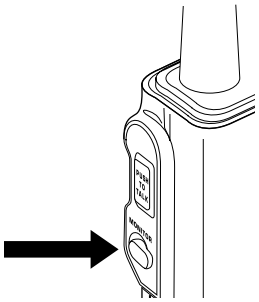
Frequency	
Freq (MHz)	You Hear
151.625	one
151.955	two
154.570	three
154.600	four
151.700	five
151.760	six
151.820	seven
151.880	eight
151.940	nine

3. Repeatedly press PUSH TO TALK to scroll through the transceiver’s business band frequencies. When you hear the business band frequency you have a license to use, release PUSH TO TALK.
4. Press MONITOR twice to store the frequency.

Using a CTCSS Frequency

Follow these steps to select a CTCSS frequency and activate or deactivate CTCSS.

1. While holding PUSH TO TALK, turn on the transceiver. You hear “frequency” and the current frequency setting (“frequency nine,” for example).
2. Press MONITOR on the side of the transceiver. You hear “code off” or “code” and the transceiver’s current CTCSS code setting (“code seven,” for example).



3. Choose a CTCSS code from the table on Page 19, then repeatedly press PUSH TO TALK to scroll through the transceiver's CTCSS codes. When you hear the CTCSS code you want, release PUSH TO TALK.

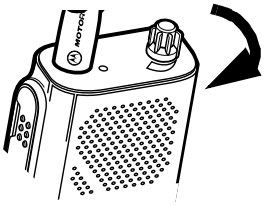
CTCSS	
Freq (Hz)	You Hear
none	off
67.0	one
71.9	two
74.4	three
77.0	four
79.7	five
82.5	six
85.4	seven
88.5	eight
91.5	nine
94.8	one zero
97.4	one one
100.0	one two
103.5	one three
107.2	one four
110.9	one five
114.8	one six
118.8	one seven
123.0	one eight
127.3	one nine
131.8	two zero

CTCSS	
136.5	two one
141.3	two two
146.2	two three
151.4	two four
156.7	two five
162.2	two six
167.9	two seven
173.8	two eight
179.9	two nine
186.2	three zero
192.8	three one
203.5	three two
210.7	three three
218.1	three four
225.7	three five
233.6	three six
241.8	three seven
250.3	three eight

4. Press MONITOR to activate the selected CTCSS code. The transceiver beeps once.

Note: You can only communicate with another transceiver that is set to the same CTCSS code as your transceiver.

1. Turn the volume control clockwise until it clicks to turn on the transceiver. The transceiver beeps and the transmit light on top of the transceiver flashes.



2. While pressing MONITOR, rotate the volume control to a comfortable listening level.
3. To transmit, hold down PUSH TO TALK. Then hold the transceiver about 3 inches from your mouth and speak slowly in a normal voice. The transmit light on top of the transceiver turns on.

   Release PUSH TO TALK when you finish your transmission.

   Note: If you connected an external speaker/microphone to the transceiver, you do not have to lift the transceiver to your mouth or press PUSH TO TALK each time you transmit. To transmit, simply speak into the microphone.
4. To turn off the transceiver, turn the volume control counterclockwise until it clicks.

Operational Hints

Your transceiver's range varies depending on factors such as position, terrain, and battery condition. Buildings absorb transmitted signals and, if they contain metal, might completely block the signals. Trees and heavy cloud formations have a similar effect, though not as severe. If you are near a lake or the ocean, you might get excellent range.

To ensure maximum range, operate the transceiver with the battery pack fully charged. As the voltage decreases, the range decreases.

Your RadioShack BTX-128 VHF/FM Business Band Transceiver is an example of superior design and craftsmanship. The following suggestions will help you care for your transceiver so you can enjoy it for years.

- Keep the transceiver dry. If it gets wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.
- Use and store the transceiver only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts.
- Keep the transceiver away from dust and dirt, which can cause premature wear of parts.
- Handle the transceiver gently and carefully. Dropping it can damage circuit boards and cases and can cause the transceiver to work improperly.
- Use only a battery pack of the required size and type. Battery packs can leak chemicals that damage your transceiver's electronic parts.
- Wipe the transceiver with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the transceiver.

Modifying or tampering with the transceiver's internal components can cause a malfunction and might invalidate your transceiver's warranty and void your FCC authorization to operate it. If your transceiver is not performing as it should, take it to your local RadioShack store for assistance.

Specifications

Frequency Range ..... 150–160 MHz

Channels 1

Modulation Type ..... FM

Antenna Impedance ..... 50 Ohm

Microphone ..... Electret Type

Power Supply ..... 7.5V 950 mAh Ni-Cd Battery Pack

Note: Do not charge the battery pack at temperatures below 32°F (0°C) or above 113°F (45°C).

Sensitivity at 12dB SINAD ..... 0.28 µV

Bandwidth ..... 12.5 KHz

Adjacent Channel Rejection ..... 50 dB

Audio Output Power ..... 500mW @ 16 ohm (10% distortion)

Audio Distortion 10%

Transmit Power 1W

Harmonic Emission ..... Better than 50 dB

Dimensions (HWD) ..... $5\frac{5}{16} \times 2\frac{1}{2} \times 1\frac{3}{16}$ Inches ($135 \times 64 \times 30.5$ mm)

Weight (with battery pack) ..... 11 oz (0.3 kg)

Specifications are typical; individual units might vary. Specifications are subject to change and improvement without notice.

NOTES

Limited One-Year Warranty

This product is warranted by RadioShack against manufacturing defects in material and workmanship under normal use for one (1) year from the date of purchase from RadioShack company-owned stores and authorized RadioShack franchisees and dealers. EXCEPT AS PROVIDED HEREIN, RadioShack MAKES NO EXPRESS WARRANTIES AND ANY IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. EXCEPT AS PROVIDED HEREIN, RadioShack SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO CUSTOMER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS OR DAMAGE CAUSED DIRECTLY OR INDIRECTLY BY USE OR PERFORMANCE OF THE PRODUCT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY, INCLUDING, BUT NOT LIMITED TO, ANY DAMAGES RESULTING FROM INCONVENIENCE, LOSS OF TIME, DATA, PROPERTY, REVENUE, OR PROFIT OR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF RadioShack HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow the limitations on how long an implied warranty lasts or the exclusion of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

In the event of a product defect during the warranty period, take the product and the RadioShack sales receipt as proof of purchase date to any RadioShack store. RadioShack will, at its option, unless otherwise provided by law: (a) correct the defect by product repair without charge for parts and labor; (b) replace the product with one of the same or similar design; or (c) refund the purchase price. All replaced parts and products, and products on which a refund is made, become the property of RadioShack. New or reconditioned parts and

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Fort Worth, Texas 76102

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