

Cat. No. 21-1672 OWNER'S MANUAL

OWNER 3 MANUAL

Please read before using this equipment.

TRC-232



Radio Shaek











Your Radio Shack TRC-232 4-Watt 40-Channel CB Walkie-Talkie is a portable, two-way citizen's band radio that you can carry almost anywhere. Use it around the house, in your office, or in your car or boat. You can put your walkie-talkie to good use on fishing and camping trips, or you can use it in your business for security patrols, supervisors, or warehouse personnel.

Your walkie-talkie has these advanced features:

Digital Phase-Locked Loop (PLL) Frequency Synthesizer provides the highest degree of accurate and stable tuning.

Auto-Scan — searches for active channels.

Dual Watch — lets you monitor one channel while listening to another.

Two Power Levels — let you save battery power on short-range transmissions.

Power Saver — reduces power consumption by 30% when the walkie-talkie is not receiving a transmission.

Large, Illuminated, Digital Display — shows the channel number, battery condition, RF power, and incoming signal strength.

Base-Loaded, Helical Antenna with BNC Connector — provides excellent reception and transmission.

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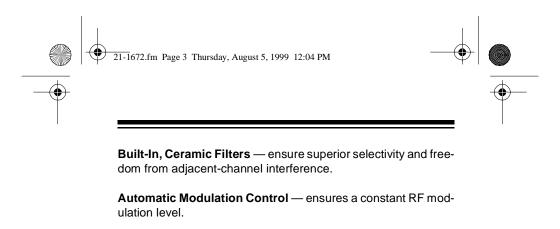












Automatic Noise Limiter — helps reduce noise caused by

Automatic Gain Control — maintains a constant volume level,

nearby electrical equipment, such as motors or automotive ignition systems.

DC Adapter Cord — lets you operate the walkie-talkie from your vehicle's cigarette lighter socket or AC power, and connect the walkie-talkie to an external, mounted antenna.

Optional Power Sources — let you operate the walkie-talkie from alkaline batteries, rechargeable nickel-cadmium batteries, your vehicle's cigarette lighter socket, or AC power.

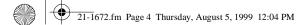
Note: You can operate a walkie-talkie without an FCC license.

For your records, we recommend you record your walkie-talkie's serial number in the space provided. The serial number is on the walkie-talkie's back panel.

Serial Number _____

regardless of the signal strength.









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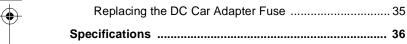












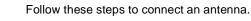


PREPARATION

CONNECTING AN ANTENNA

Caution: To prevent damage to your walkie-talkie, you must connect an antenna before you operate the walkie-talkie.

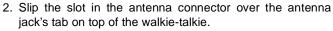
Your walkie-talkie comes with a helical antenna that is ideal for most applications. However, the walkie-talkie's BNC antenna connector makes it easy to connect other types of antennas. Your local Radio Shack store sells a wide variety of antennas. Choose the one that best meets your needs.



 Position the BNC antenna connector over the antenna jack on the walkie-talkie.









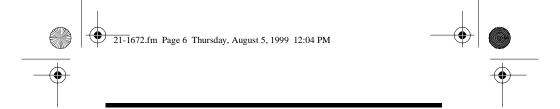












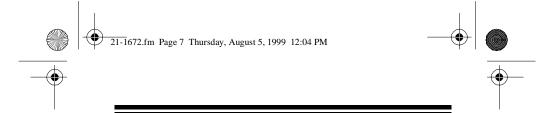
3. Press down and turn the antenna's base clockwise until it locks into place.



Note: If you are powering your walkie-talkie from your vehicle's cigarette lighter socket or from AC power, you can connect the supplied DC adapter cord's antenna connector to an external antenna (see "Using Vehicle Battery Power" on Page 13 or "Using AC Power" on Page 15).

To use a base-station or mobile antenna, attach an appropriate connector adapter (not supplied) to the end of the antenna's cable. Then insert it onto the walkie-talkie's antenna connector.





Warning: Use extreme caution when installing or removing an outdoor antenna. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna touches a power line, contact with the antenna, mast, cable, or guy wires can cause electrocution and death. Call the power company to remove the antenna. DO NOT attempt to do so yourself.

POWER SOURCES

You can power the walkie-talkie from any of four sources:

- · Alkaline batteries (using the supplied alkaline battery case)
- Rechargeable nickel-cadmium batteries (using the supplied nickel-cadmium battery case)
- Your vehicle's battery (using the supplied DC adapter)
- Standard AC power (using the supplied DC adapter and an optional 12-volt DC power supply)

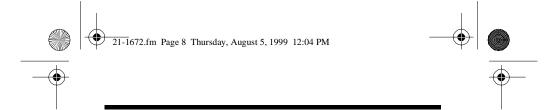
Using Alkaline Batteries

You can operate the walkie-talkie with six AA batteries, using the supplied alkaline battery case. For the longest operation and best performance, we recommend Radio Shack Cat. No. 23-552.







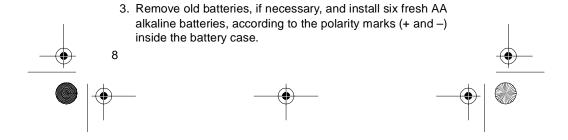


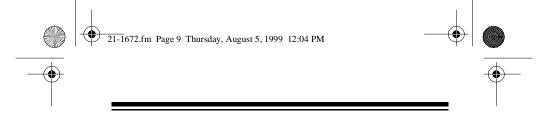
Follow these steps to install batteries in the alkaline battery case.

 If the alkaline battery case is connected to the walkietalkie, push the battery latch up and slide the battery case off the walkie-talkie.



2. Using your thumb, press down on one of the arrow marks on top of the battery case and pull it open.





 Press the battery case back together and slide it onto the walkie-talkie.

Cautions:

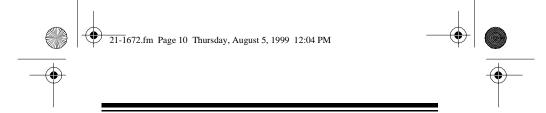
- Never mix different types of batteries, and never mix old and new batteries.
- Do not put alkaline batteries in the rechargeable battery case.
- Use only replacement batteries of the required type.
- Do not dispose of the batteries in a fire because they can explode.
- Do not open or mutilate a battery. Swallowing a battery can be fatal.
- Be careful not to short the batteries with conducting materials, such as rings, bracelets, and keys. The batteries or conductor might overheat and burn.

If BATT LOW appears on the display, replace the batteries.

Using Rechargeable Batteries

You can operate the walkie-talkie with nine rechargeable nickel-cadmium AA batteries (Cat. No. 23-125) using the supplied rechargeable battery case. You need a charger to recharge batteries in the rechargeable battery case (see "Charging Nickel-Cadmium Batteries" on Page 11).





Follow these steps to install batteries in the rechargeable battery case.

- 1. If the rechargeable battery case is connected to the walkietalkie, push the battery latch up and slide the battery case off the walkie-talkie.
- 2. Using your thumb, press down on one of the arrow marks on top of the battery case and pull it open.





- 3. Remove old batteries, if necessary, and install nine AA rechargeable batteries, according to the polarity marks (+ and –) inside the battery case.
- 4. Press the battery case back together.
- 5. Charge the batteries. See "Charging Nickel-Cadmium Batteries" on Page 11.
- 6. Slide the battery case onto the walkie-talkie.

If **BATT LOW** appears on the display, you need to recharge the batteries.

Cautions:



• Use only replacement batteries of the required type.

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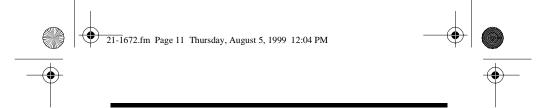












- Do not dispose of the batteries in a fire because they can explode.
- Do not open or mutilate a battery. Swallowing a battery can be fatal.
- Be careful not to short the batteries with conducting materials, such as rings, bracelets, and keys. The batteries or conductor might overheat and burn.
- At the end of a rechargeable battery'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 curbside collection, drop-off boxes at retailers such as your local Radio Shack store, recycling collection centers, and mail-back programs.



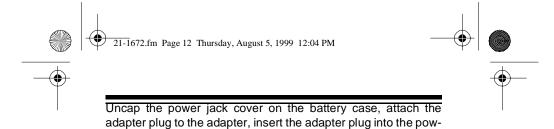


Charging Nickel-Cadmium Batteries

You need a battery charger (Cat. No. 273-1652) and the supplied adapter plug to charge batteries in the supplied rechargeable battery case.

Caution: Never use any charger other than Cat. No. 273-1652 to recharge the batteries in the rechargeable battery case. Even battery chargers with the same voltage and current ratings could permanently damage your walkie-talkie or the batteries.





er jack, then plug the charger into a standard AC outlet.



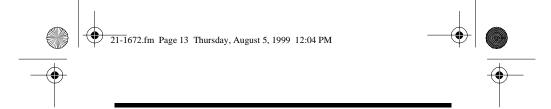
Warning: Never try to recharge alkaline or other non-rechargeable batteries. Charging non-rechargeable batteries can cause them to become very hot and possibly explode.

Notes:

- You can recharge the batteries with the battery case attached to the walkie-talkie, but be sure to turn off the walkie-talkie before you charge them.
- Charging time is 14 to 16 hours the first time. Subsequent recharging takes about 8 to 10 hours.
- Occasionally, let the nickel-cadmium batteries totally discharge by using the walkie-talkie until BATT LOW appears on the display. Then fully charge the batteries. This conditions the batteries so they use their full charging capacity.

Caution: To prevent permanent nickel-cadmium power loss, never charge the batteries in an area where the temperature is above about 90°F.



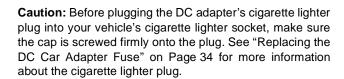


Using Vehicle Battery Power

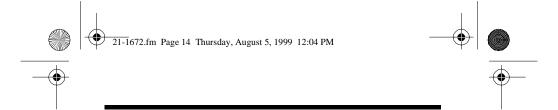
Your walkie-talkie comes with a DC car adapter that is ideal for use in your vehicle. It lets you power your walkie-talkie from your vehicle's cigarette lighter socket (if your vehicle has a 12-volt negative-ground electrical system), and its antenna adapter connector makes it easy to connect to an external antenna mounted on your vehicle. Your local Radio Shack store sells a wide variety of mobile walkie-talkie antennas. Choose the one that best meets your needs.

Follow these steps to use DC power.

- If either battery case is connected to the walkie-talkie, push the battery latch up and slide the battery case off the walkie-talkie.
- 2. Slide the DC car adapter onto the walkie-talkie.







3. Insert the cigarette lighter plug into your vehicle's cigarette lighter socket.



Note: If the walkie-talkie does not operate properly when you use the DC car adapter, unplug the cord from the lighter socket and clean any ashes or other debris from the socket. If it still does not operate properly, check the fuse in the DC car adapter plug (see "Replacing the DC Car Adapter Fuse" on Page 34).

4. To connect an external, mounted antenna using the DC car adapter, attach the female antenna connector on the DC car adapter to a male antenna connector on the external, mounted antenna cable.

Then disconnect the antenna connected to the antenna jack on the walkie-talkie.

5. When you finish using the DC car adapter, disconnect it from the cigarette lighter socket. Then disconnect the adapter cord from your walkie-talkie. Reconnect the supplied antenna to the antenna jack on the walkie-talkie.





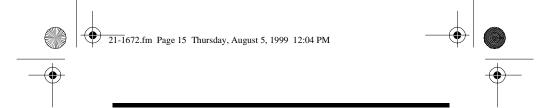












Using AC Power

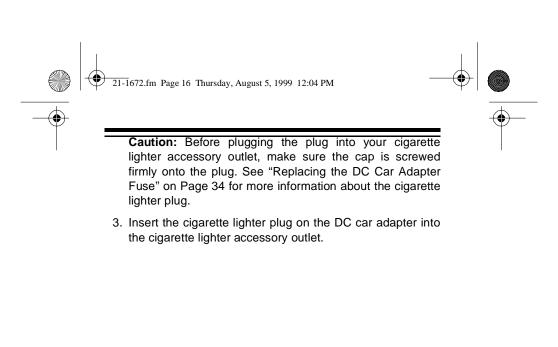
You can operate the walkie-talkie from AC power using the supplied DC car adapter, a 12-volt DC power supply (such as Cat. No. 22-120), and a cigarette lighter accessory outlet (such as Cat. No. 270-1539). The supplied DC car adapter also lets you connect an external, mounted walkie-talkie antenna.

Note: Most 12-volt DC power supplies plug into a standard AC outlet to produce DC power. Before connecting your walkie-talkie to a 12-volt DC power supply, read and follow the instructions included with the power supply.

Follow these steps to power the walkie-talkie from AC power.

- 1. Slide the DC car adapter onto the walkie-talkie.
- 2. Using the double-sided foam tape supplied with the cigarette lighter accessory outlet, mount the cigarette lighter accessory outlet to the DC power supply.



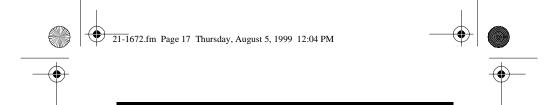


5. To connect an external, mounted antenna using the DC car adapter, attach the female antenna connector on the DC car adapter to a male antenna connector on the external, mounted antenna cable.

4. Connect the DC power supply to a standard AC outlet.

Then disconnect the antenna connected to the antenna jack on the walkie-talkie.

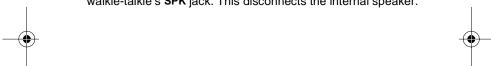




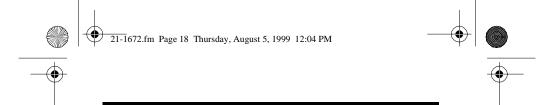
 When you finish using the DC adapter cord, disconnect it from the cigarette lighter accessory outlet. Then disconnect the adapter cord from your walkie-talkie. Reconnect the supplied antenna to the antenna jack on the walkie-talkie.

USING AN EXTERNAL SPEAKER

In a noisy area, an external speaker positioned in the right place might provide more comfortable listening. Remove the cap and plug the speaker cable's ½-inch (3.5 mm) mini plug into the walkie-talkie's **SPK** jack. This disconnects the internal speaker.







CONNECTING AN EXTERNAL SPEAKER/MICROPHONE

You can use an external speaker/microphone (such as Cat. No. 19-310) for hands-free operation. Remove the cap and plug the speaker/microphone's connector into the walkie-talkie's **MIC** and **SPK** jacks.



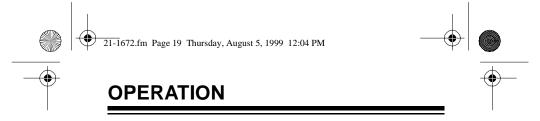
USING THE WRIST STRAP

You can use the attached wrist strap to keep the walkie-talkie accessible. Simply slip the strap over your hand.

USING THE BELT CLIP

You can use the attached belt clip to make the walkie-talkie easier to use when you are on the go. Simply slide the belt clip over your belt or waistband.





Before you use your walkie-talkie, you should know how to use it effectively and courteously. "Operational Hints" contains information that will help you get more enjoyment from your walkie-talkie.

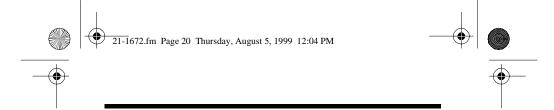
RECEIVING TRANSMISSIONS AND ADJUSTING SQUELCH

1. Turn **SQUELCH** fully counterclockwise.



2. Turn on the power by turning **VOLUME** clockwise.





3. Press UP or DWN until the desired channel appears on the display. As you receive signals, the signal meter on the display shows the incoming signal strength.



Important! Channel 9 is reserved for motorist assistance and for reporting emergency information about accidents, hazardous road conditions, and so on. Always give emergency messages priority on Channel 9.

4. Adjust SQUELCH to cut out background noise between transmissions. To do this, wait until there is no signal on the channel. Then slowly turn SQUELCH clockwise until the background noise stops.

Note: Do not turn SQUELCH too far clockwise because you might cut out weak signals, too.

- 5. Adjust **VOLUME** to a comfortable listening level.
- 6. To turn off the walkie-talkie, turn VOLUME counterclockwise until you hear it click.

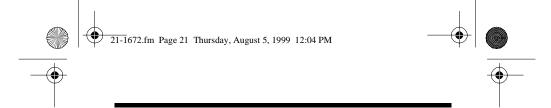


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TRANSMITTING

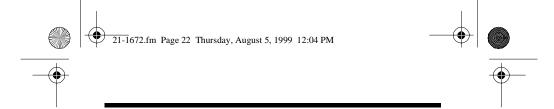
- 1. Follow the steps described in "Receiving Transmissions and Adjusting Squelch."
- 2. To transmit, press **PTT. TX** appears on the display. The RF Out meter on the display shows the output level. Hold the walkie-talkie about 2–3 inches from your mouth and speak slowly and clearly in a normal tone of voice.



Note: A built-in automatic modulation circuit adjusts the microphone's sensitivity to allow for a wide variety of voice levels.

3. When you finish transmitting, release PTT.





Press H/L to set the output power to low power, if necessary. LOW appears on the display. Use this mode to transmit to nearby units.





If the other walkie-talkie is farther away or the receiving person complains of noise, press **H/L** again to set it to high output power. **LOW** disappears from the display.

To turn off the walkie-talkie, turn VOLUME counterclockwise until you hear it click.

USING SPECIAL CONTROLS AND FUNCTIONS

Your walkie-talkie has several unique controls and functions. We recommend you read the following sections about the controls and functions so you can fully enjoy your walkie-talkie.





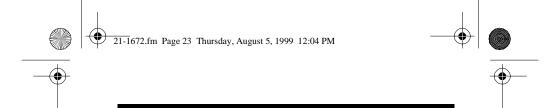












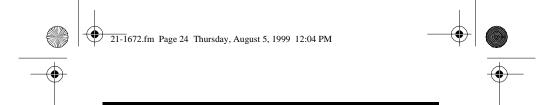
Turning On/Off the Light

Press LGT to turn on and off the display's light.



Press LCR to return to the last channel that was used for longer than 3 seconds or was transmitted on.





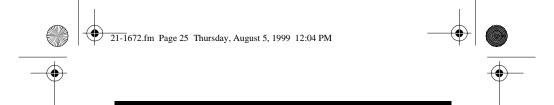
Scanning Incoming Signals

To scan incoming signals, press **SCAN**. **SCAN** appears on the display, and the walkie-talkie stops for 5 seconds on each channel where there is a transmission. Press **SCAN** again to stop automatic scanning. **SCAN** disappears from the display.



To alternate between two channels, select one channel and press **DW** (dual watch). **DW** appears on the display. Using the **UP** or **DWN** channel buttons, select another channel.

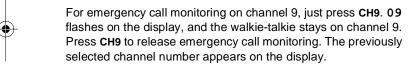




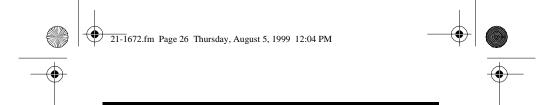
The walkie-talkie alternates between the first selected channel (the dual watch channel) and the currently selected channel. Whenever the walkie-talkie detects a transmission on the first channel, it switches back to that channel. After 5 seconds, the walkie-talkie returns to the second channel (even if the transmission is not complete).

To turn off dual watch, press ${\bf DW}.$ ${\bf DW}$ disappears from the display.

Monitoring Channel 9







Locking the Functions

Use the LOCK switch to lock the walkie-talkie's functions (except PTT, LGT, and H/L) to prevent accidental program changes. Press LOCK so LOCK appears on the display. To release the lock, press LOCK again. LOCK disappears from the display.



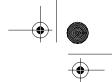
POWER SAVER

Your walkie-talkie features a special power saver circuit. If the walkie-talkie does not receive a transmission for more than 10 seconds, the circuit sets the walkie-talkie to standby and PS flashes on the display.

During standby, the walkie-talkie uses only 70% of the power consumed during regular operation. The walkie-talkie returns to normal power when it receives a transmission, when you turn **SQUELCH** counterclockwise until you hear noise, or when you press any control or function switch.









OPERATIONAL HINTS

Like most activities, CB radio has its customs and courtesies. The following tips will help you get the most enjoyment from your walkie-talkie.

COMMON USES FOR A CB RADIO

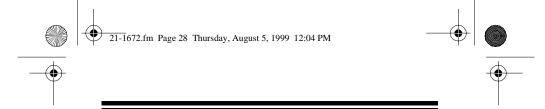
Business Uses

- Truck drivers and delivery personnel can learn road and traffic conditions and get assistance in locating destinations. A CB radio is also good company on those "long hauls."
- On construction crews, a CB radio quickly pays for itself when you are calling for additional materials or coordinating the activities of different work crews.
- For security officers, a CB radio is more than a convenience it is a must for both safety and efficiency.

Personal Uses

 Keep in touch with home while driving to work, to the store, or to a social activity. Let your family know you are tied up in traffic or that you will stop by the store on the way home.





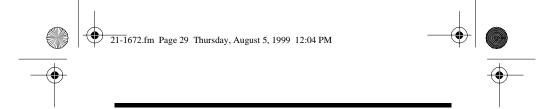
- If you are a two-car (or more) family, CB radios are great for communicating with family members while they are in their cars
- Contact friends or neighbors find out "what's happening" or plan a get-together.
- Ever have car trouble or run out of gas on the highway?
 What an assurance it is to be able to radio for assistance!
- Camping, fishing, and other sports are more fun with a CB radio. Locate a buddy or find out "what's cooking" back at camp.



TRANSMISSION COURTESY

- Wait for a pause in someone else's transmission before you ask for a break.
- If you do not receive an answer to your call after a second attempt, sign off and wait several minutes before trying again.
- Do not hold down the PTT button when you are not talking. (This is called dead keying.)
- Assist callers with directions, information about road conditions, and any other reasonable requests.

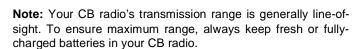




MAXIMUM RANGE

The maximum range and quality of CB radio transmissions vary depending on the following conditions:

- The type and quality of antenna used
- The height of the antenna's mounting location the higher the antenna, the better the signal's range
- The surrounding terrain mountains and tall buildings limit range
- · Weather conditions
- The number of nearby radios operating on the same channel



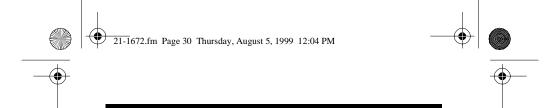
USING COMMON 10-CODES

Citizen's band operators and CB radio users have largely adopted the 10-codes for standard questions and answers. These codes permit faster communication and better intelligibility in noisy areas.



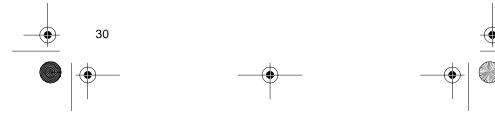


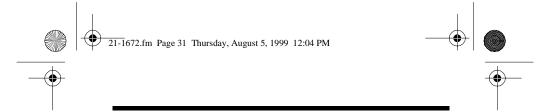




This table lists codes adopted by the Associated Public Safety Communications Officers (APCO).

Code	Meaning
10-1	Your signal is bad.
10-2	Your signal is good.
10-3	Stop transmitting.
10-4	Message received and understood.
10-5	Relay information to
10-6	I am busy or are you busy?
10-7	Out of service.
10-8	In service.
10-9	Repeat last message.
10-10	Negative (NO).
10-11	in service.
10-12	Stand by.
10-13	Report road/weather conditions.
10-14	Information.
10-15	Message delivered.
10-16	Reply to message.





Code	Meaning
10-17	En route.
10-18	Urgent.
10-19	Contact
10-20	What is your location?
10-21	Call by telephone.
10-22	Cancel last message.
10-23	Arrived at the scene.
10-24	Assignment complete.
10-25	Meet
10-26	Estimated time of arrival is
10-30	Use caution.
10-31	Pick up.
10-33	Emergency traffic. Clear the channel.
10-34	What time is it?
10-41	Switch to Channel xx.
10-62	Cannot understand.









CARE

Your Radio Shack TRC-232 4-Watt 40-Channel CB Walkie-Talkie is an example of superior design and craftsmanship. The following suggestions will help you care for the CB radio so you can enjoy it for years.

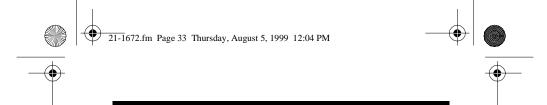
- Keep the walkie-talkie dry. If it gets wet, wipe it dry immediately. Liquids can contain minerals that can corrode the electronic circuits.
- Handle the walkie-talkie gently and carefully. Dropping it can damage circuit boards and cases and can cause the walkie-talkie to work improperly.
- Use and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

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







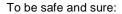


FCC INFORMATION

The Federal Communications Commission (FCC) does not require you to have a license to operate this CB radio. However, you must know Part 95 of *FCC Rules*. It explains the proper operation of a Class D citizens band transceiver. We enclosed a copy of Part 95 with your CB radio.

Warning: Do not open the CB radio to make any internal adjustments. A CB radio is set up to transmit a regulated signal on an assigned frequency. It is against the law to alter or adjust the settings inside the unit to exceed these limitations. Any adjustments to a CB radio must be made by a qualified technician using the proper test equipment.





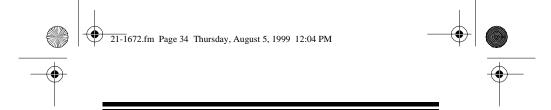
- 1. Never open your CB radio's case.
- 2. Never change or replace anything in your CB radio.

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

- · Moving your CB radio away from the receiver
- · Contacting your local Radio Shack store for help







This device complies with Part 15 of *FCC Rules*. Operation is subject to the following two conditions:

- 1. This device may not cause harmful interference.
- 2. This device must accept any interference received, including interference that may cause undesired operation.

REPLACING THE DC CAR ADAPTER FUSE



The DC car adapter has a 32V 2-amp fuse in the cigarette lighter plug. When replacement is required, use a slow-blow glass fuse, such as Cat. No. 270-1023.



- Turn the cap on the adapter plug counterclockwise to unscrew it from the plug body.
- 2. Remove the old fuse and inspect its condition. If it is "blown" and requires replacement, insert a new 2-amp fuse. If it is not "blown," reinsert it.
- 3. Replace the spring, the terminal, and the cap and screw the cap in tightly.



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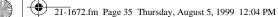


















SPECIFICATIONS

RECEIVER

Frequency Coverage 26.965–27.405 MHz
Sensitivity 0.7 mV for 10dB (S+N)/N
Adjacent Channel Rejection 65 dB
Audio Distortion at 1 kHz Less than 10% at 0.6 watts output (8 ohm)
Intermediate Frequency: 1st
Current Drain: At Standby

TRANSMITTER

Frequency Coverage	 26.965-27.405 MHz
Frequency Coverage	 26.965-27.405 MHz

Power Input:

HI PositionLOW Position	
Power Output: HI Position LOW Position	
Modulation	80–95%
Spurious Output –60 dB	or better



















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Frequency Tolerance		0.002%
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Current Drain (with modulation):

GENERAL

Microphone Built-In Electret-Condenser Type with FET Amplifier

External Microphone Jack Sub Mini Type

External Speaker Jack Miniature Type

Operating Temperature 0°-140°F (-18°-60°C)

Size (HWD)

With Nickel-Cadmium

Battery Case $6^3/8 \times 2^1/2 \times 1^1/2$ Inches $(169 \times 63 \times 39 \text{ mm})$

With Alkaline Battery Case $5^{1/4} \times 2^{1/2} \times 1^{1/2}$ Inches $(146 \times 63 \times 39 \text{ mm})$

With DC Adapter Cord $5 \times 2^{1/2} \times 1^{1/2}$ Inches $(127 \times 63 \times 39 \text{ mm})$

Weight

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



















