Cat. No. 20-227

OWNER'S MANUAL

Please read before using this equipment.

DX-397

AM/FM/SW 12-Band Portable Receiver

RadioShack®

FEATURES

Your RadioShack DX-397 AM/FM/SW 12-Band Portable Receiver brings you the voices of the world. Simple to operate, the receiver tunes mediumwave (MW or AM), FM, and shortwave stations. In the 10 international shortwave bands, you can hear news broadcasts and other programs from sources around the world, such as Radio Japan, Israel Radio, the British Broadcasting Corporation, and Radio Australia.

Your receiver's features include:

Light and Compact Design — lets you carry the receiver with you wherever you go.

Two Built-In Antennas — provide good reception of received signals.

Earphone Jack — lets you connect earphones or headphones for private listening.

Three Power Options — let you power the receiver from batteries, standard AC power (with an optional AC adapter), or your vehicle's battery (with an optional DC cigarette lighter adapter).

Shortwave Band Coverage List — this Owner's Manual lists the most popular U.S. and international shortwave stations, so you can quickly tune to these stations.

CONTENTS

PREPARATION

CONNECTING TO POWER

You can power the receiver from internal batteries, standard AC power, or your vehicle's battery.

Installing Batteries

You can use three AA batteries (not supplied) to power the receiver. For the best results and longest life, we recommend alkaline batteries such as RadioShack Cat. No. 23-552.

Cautions:

- Always use fresh batteries of the required size and recommended type.
- Do not mix old and new batteries, different types of batteries (standard, alkaline, or rechargeable), or rechargeable batteries of different capacities.

Follow these steps to install the batteries.

1. Open the battery compartment cover by pressing on the dotted portion and sliding it in the direction of the arrow below. ***(Illus)***

2. Slide three AA batteries into the compartment according to the polarity symbols (+ and –) marked inside. ***(Illus)***

3. Close the cover.

Cautions:

- If you will not be using battery power or if you will only use an adapter for several months, remove the batteries.
- Dispose of old batteries promptly and properly.

Using Standard AC Power

To power the receiver from standard AC power, you need an optional AC adapter, such as Cat. No. 273-1662.

Note: Connecting an AC adapter disconnects internal batteries.

Cautions:

- The AC adapter must be capable of delivering 4.5 volts, its center tip must be set to negative, it must deliver at least 200 milliamps, and its barrel plug must properly fit the receiver's **DC IN 4.5V** jack. The recommended adapter meets these specifications. Using an adapter that does not meet these specifications could damage the receiver or the adapter.
- When you finish using the AC adapter, unplug it from the AC outlet first, then disconnect it from the receiver.

Follow these steps to use AC power.

(Illus)

1. Set the adapter's voltage switch to 4.5V.
2. Line up the 5.5 mm outer diameter/2.1 mm inner diameter barrel plug with the adapter's socket so it reads –TIP, and insert the plug into the socket.
3. Insert the barrel plug into the receiver's **DC IN 4.5V** jack.
4. Plug the adapter into a standard AC outlet.

Using Vehicle Battery Power

To power the receiver from your vehicle's battery, you need an optional DC cigarette lighter adapter, such as Cat. No. 270-1560.

Cautions:

- The DC cigarette lighter adapter must be capable of delivering 4.5 volts, its center tip must be set to negative, it must deliver at least 200 milliamps, and its barrel plug must properly fit the receiver's **DC IN 4.5V** jack. The recommended adapter meets these specifications. Using an adapter that does not meet these specifications could damage the receiver or the adapter.
- Always plug the DC cigarette lighter adapter into the receiver before you plug it into your vehicle's cigarette-lighter socket. Always unplug the adapter from the vehicle's cigarette-lighter socket before you unplug it from the receiver.

Follow these steps to power the receiver from your vehicle's battery.

(illus)

1. Set the DC cigarette lighter adapter's voltage switch to 4.5V.
2. Line up the 5.5 mm outer diameter/2.1 mm inner diameter barrel plug with the adapter's socket so it reads –TIP, and insert the plug into the socket.
3. Insert the adapter's barrel plug into the receiver's **DC IN 4.5 V** jack.
4. Insert the adapter's plug into the vehicle's cigarette-lighter socket.

ADJUSTING THE ANTENNAS

FM/SW — For the best FM and shortwave reception, pull up the telescoping antenna's base, then fully extend the antenna and position it for the best reception.

(Illus)

MW (AM) — For the best MW reception, rotate the receiver. The receiver uses a built-in antenna for this band.

(Illus)

CONNECTING AN EARPHONE/ HEADPHONES

For private listening, you can plug optional mono headphones or an earphone with a $^{1}/_{8}$-inch (3.5 mm) plug (both available at your local RadioShack store) into the 🎧 jack on the left side of the receiver. This automatically disconnects the internal speaker.

(illus)

Listening Safely

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

- Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.
- 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 or headphones with your receiver 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 or headphones with your receiver, be very careful. Do not listen to a continuous broadcast. Even though some earphones or headphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.

OPERATION

1. To turn on the receiver, slide **POWER** to **ON**.

(illus)

2. Set **SW/MW/FM** to the desired band. To tune a shortwave broadcast, set **SW/MW/FM** to one of the SW bands (**1** to **10**). See “International Frequencies” on Page 12 for information about each SW band.

(illus)

3. Adjust **TUNING** to tune to the desired station then adjust either of the radio’s antennas if necessary (see “Adjusting the Antennas” on Page 7). The TUNING indicator on the front of the receiver lights when a station is properly tuned.

(Illus)

4. Adjust **VOLUME** to a comfortable listening level.

(Illus)

5. Slide **POWER** to **OFF** to turn off the receiver.

LISTENING HINTS

Shortwave listening is a hobby with thousands of participants worldwide. It requires no special knowledge or skills, but your enjoyment increases as you gain experience and develop special listening techniques.

The information in this section can help you make the most of your DX-397.

REFERENCE SOURCES

Publications about shortwave listening such as *Listening to Shortwave Radio* (available at your local RadioShack store), the *World Radio Handbook*, *Radio Amateur's Handbook*, *Passport to World Band Radio*, *Monitoring Times*, and *Popular Communications* are available through your local library or newsstand. These publications can help you learn about the conditions that make long-distance reception possible and provide up-to-date listings for shortwave broadcasts in English and in other languages.

FREQUENCY CONVERSION

A band is a group of frequencies. Sometimes, bands are grouped according to their wavelengths, in meters. The tuning location of a station can be expressed as a frequency (kHz or MHz) or a wavelength (meters).

Amateur radio operators generally refer to the frequencies they operate on using the frequency's wavelength. For example, the 19-meter band refers to the range of frequencies with waves about 19 meters long.

Use the following equations to convert kHz, MHz, and meters.

To convert MHz to kHz, multiply by 1,000. For example:

9.62 MHz ¥ 1000 = 9,620 kHz

To convert kHz to MHz, divide by 1,000. For example:

2780 kHz ³ 1000 = 2.780 MHz

To convert MHz to meters, divide 300 by the number of MHz. For example:

300 ³ 7.1 MHz = 42.25 meters

To convert meters to MHz, divide 300 by the number of meters. For example:

300 ³ 42.25 meters = 7.1 MHz

BAND ALLOCATION

International Frequencies

International commercial broadcasts are found in the following shortwave bands. Programs (often in English) usually contain news, commentaries, music, and special features reflecting the culture of the broadcasting country. Reception for this range is best between 6:00 PM and midnight (your time).

Band	Frequency Range (in MHz)
SW1	4.39–5.18
SW2	5.72–6.33
SW3*	7.00–8.05
SW4	9.20–10.02
SW5	11.35–12.25

Band	Frequency Range (in MHz)
SW6**	13.25–14.28
SW7	15.00–16.05
SW8	17.30–18.18
SW9	18.70–19.25
SW10	21.20–22.30

*These bands are reserved for stations in tropical areas.

**Interference is heavy in this band because amateur radio operators and international stations share this range.

Time Standard Frequencies

These stations announce the exact time of day at specified intervals.

WWV in Fort Collins, Colorado: 5,000 kHz

CHU in Canada: 7,335 kHz

VNG in Australia: 12,000 kHz

LISTENING GUIDE

The following list contains some of the most popular stations. All stations broadcast in English unless otherwise specified. You can hear these stations throughout North America. However, reception varies based on the season, time of day, and a number of other conditions.

This information can change at any time. For sources of yearly, up-to-date listings, see “Reference Sources” on Page 11.

kHz	Station	Location	Programs are in:
4,750	Radio Bertoua	Bertoua, Cameroon	
4,755	Imo Regional Radio	Imo, Nigeria	
4,777	Radio/TV Gabon	Libreville, Gabon	French
4,795	Radio Nueva America	La Paz, Bolivia	Spanish
4,820	Radio Paz y Bien	Ambala, Ecuador	Spanish
4,832	Radio Reloj	San Jose, Costa Rica	Spanish
4,855	Radio Clube do Para	Belem, Brazil	Portuguese
4,890	National Broadcasting Commission	Papua New Guinea	
4,915	Voice Kenya	Nairobi, Kenya	
4,920	Australian Broadcasting Commission	Brisbane, Australia	
4,945	Radio Colosal	Neiva, Colombia	Spanish
4,965	Radio Santa Fe	Bogota, Colombia	Spanish
4,980	Ecos del Torbes	San Cristobal, Venezuela	Spanish
5,020	Solomon Islands Broadcasting Service	Honiara, Solomon Islands	
5,057	Radio Gjirokaster	Gjirokaster, Albania	Albanian
5,950	Guyana Broadcasting Service	Georgetown, Guyana	
5,954	Radio Casino	Puerto Limon, Costa Rica	

kHz	Station	Location	Programs are in:
5,960	Radio Canada International	Montreal, Canada	
5,980	Radio RSA	Johannesburg, South Africa	
6,005	CFCX	Montreal, Canada	
6,025	Radio Malaysia	Kuala Lumpur, Malaysia	Chinese
6,045	Radio Australia	Lyndhurst, Australia	
6,055	Nihon Shortwave Broadcasting Company	Tokyo, Japan	Japanese
6,060	Radio Nacional	Buenos Aires, Argentina	Spanish
6,075	Radio Sutatenza	Bogota, Colombia	Spanish
6,090	Radio Luxem-bourg	Ville Louvigny, Luxembourg	
6,095	Polskie Radio	Warsaw, Poland	
6,105	Radio New Zealand	Wellington, New Zealand	
7,140	Trans World Radio	Monte Carlo, Monaco	
7,170	Radio Noumea	Noumea, New Caledonia	French
7,300	Radio Tirana	Tirana, Albania	
9,475	Radio Cairo	Cairo, Egypt	
9,515	Voice of Greece	Athens, Greece	
9,525	Radio Korea	Seoul, South Korea	
9,530	Spanish Foreign Radio	Madrid, Spain	
9,535	Swiss Radio International	Berne, Switzerland	
9,540	Radio Prague	Prague, Czech Republic	
9,570	Radio Bucharest	Bucharest, Romania	
9,575	Italian Radio and Television Ser-vice	Rome, Italy	

kHz	Station	Location	Programs are in:
9,610	Radio-TV Algeria	Algiers, Algeria	Arabic
9,620	Radio Berlin International	Berlin, Germany	
9,645	Radio Norway	Oslo, Norway	
9,720	Radio Iran	Tehran, Iran	Farsi
9,745	HCJB	Quito, Ecuador	
9,770	Austrian Radio	Vienna, Austria	
9,800	Radio Kiev	Kiev, Ukraine	
9,835	Radio Budapest	Budapest, Hungary	
11,655	Israel Radio	Jerusalem, Israel	
11,690	Radio Kuwait	Kuwait City, Kuwait	
11,705	Radio Sweden	Stockholm, Sweden	
11,720	Radio Moscow	Moscow, Russia	
11,735	Radio Sofia	Sofia, Bulgaria	
11,745	Voice of Free China	Taipei, Taiwan	
11,815	Radio Japan	Tokyo, Japan	
11,825	Radio Tahiti	Papeete, Tahiti	Tahitian
11,835	4VEH	Cap Haitien, Haiti	
11,845	Radio Canada International	Montreal, Canada	
11,850	Deutsche Welle	Cologne, Germany	
11,890	Voice of Chile	Santiago, Chile	
11,900	Radio RSA	Johannesburg, South Africa	
11,910	BBC	London, England	
11,930	Radio Havana Cuba	Havana, Cuba	
11,935	Radio Portugal	Lisbon, Portugal	
11,945	Radio Beijing	Beijing, China	
11,955	Voice of Turkey	Ankara, Turkey	
11,980	Radio Moscow	Moscow, Russia	
15,135	Radio Moscow	Moscow, Russia	
15,165	HCJB	Quito, Ecuador	

kHz	Station	Location	Programs are in:
15,190	ORU	Brussels, Belgium	
15,205	All India Radio	New Delhi, India	
15,260	BBC	London, England	
15,265	Finnish Radio	Helsinki, Finland	
15,275	Radio Sweden	Stockholm, Sweden	
15,305	Swiss Radio International	Berne, Switzerland	
15,310	Radio Japan	Tokyo, Japan	
15,320	Radio Australia	Melbourne, Australia	
15,400	BBC	London, England	
15,430	Radio Mexico	Mexico City, Mexico	Spanish
15,465	Radio Pakistan	Islamabad, Pakistan	Urdu
17,720	Radio France International	Paris, France	
17,825	Vatican Radio	Vatican City	
17,860	Austrian Radio	Vienna, Austria	
21,495	Israel Radio	Jerusalem, Israel	
21,525	Radio Australia	Melbourne, Australia	
21,625	Israel Radio	Jerusalem, Israel	
21,645	Radio France International	Paris, France	
21,735	Radio-TV Morocco	Rabat, Morocco	Arabic

CARE AND MAINTENANCE

Your RadioShack DX-397 AM/FM/SW 12-Band Portable Receiver is an example of superior design and craftsmanship. The following suggestions will help you care for your receiver so you can enjoy it for years.

Keep the receiver dry. If it gets wet, wipe it dry immediately. Liquids can contain minerals that can corrode the electronic circuits.

Use and store the receiver only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts.

Handle the receiver gently and carefully. Dropping it can damage circuit boards and cases and can cause the receiver to work improperly.

Keep the receiver away from dust and dirt, which can cause premature wear of parts.

Wipe the receiver with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the receiver.

Use only fresh batteries of the required size and recommended type. Always remove old and weak batteries. They can leak chemicals that destroy electronic circuits.

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

THE FCC WANTS YOU TO KNOW

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

- Moving your receiver away from the receiver
- Connecting your receiver to an outlet that is on a different electrical circuit from the receiver
- Contacting your local RadioShack store for help

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

SPECIFICATIONS

Power Supply ..... 3 AA batteries
AC/DC adapter 4.5V DC 200 mA center tip negative

Frequency Ranges:

- FM ..... 88–108 MHz
- MW (AM) ..... 530–1710 kHz
- SW1 (60 m) ..... 4.39–5.18 MHz
- SW2 (49 m) ..... 5.72–6.33 MHz
- SW3 (41 m) ..... 7.00–8.05 MHz
- SW4 (31 m) ..... 9.20–10.02 MHz
- SW5 (25 m) ..... 11.35–12.25 MHz
- SW6 (21 m) ..... 13.25–14.28 MHz
- SW7 (19 m) ..... 15.00–16.05 MHz
- SW8 (16 m) ..... 17.30–18.18 MHz
- SW9 (15 m) ..... 18.70–19.25 MHz
- SW10 (13 m) ..... 21.20–22.30 MHz

Maximum Sensitivity (for 50 mW output 8 Ohm):

- FM ..... 6.3 µV at 98 MHz
- MW (AM) ..... 631 µV at 1,000 kHz
- SW1 (60 m) ..... 10 µV at 4.9 MHz
- SW2 (49 m) ..... 10 µV at 6.05 MHz
- SW3 (41 m) ..... 10 µV at 7.2 MHz
- SW4 (31 m) ..... 12.6 µV at 9.5 MHz
- SW5 (25 m) ..... 12.6 µV at 11.7 MHz
- SW6 (21 m) ..... 12.6 µV at 13.8 MHz
- SW7 (19 m) ..... 15.9 µV at 15.5 MHz
- SW8 (16 m) ..... 15.9 µV at 17.5 MHz
- SW9 (15 m) ..... 15.9 µV at 18.9 MHz
- SW10 (13 m) ..... 15.9 µV at 21.5 MHz

Usable Sensitivity (for 20 dB S/N):

- FM (for 30 dB S/N) ..... 12.6 µV at 98 MHz
- MW (AM) ..... 1,000 µV at 1,000 kHz
- SW1 (60 m) ..... 12.6 µV at 4.9 MHz
- SW2 (49 m) ..... 12.6 µV at 6.05 MHz
- SW3 (41 m) ..... 12.6 µV at 7.2 MHz
- SW4 (31 m) ..... 12.6 µV at 9.5 MHz

SW5 (25 m) ..... 12.6 µV at 11.7 MHz
SW6 (21 m) ..... 12.6 µV at 13.8 MHz
SW7 (19 m) ..... 15.9 µV at 15.5 MHz
SW8 (16 m) ..... 15.9 µV at 17.5 MHz
SW9 (15 m) ..... 15.9 µV at 18.9 MHz
SW10 (13 m) ..... 15.9 µV at 21.5 MHz

Speaker ..... 2.5 Inch, 8 Ohm, 0.5 Watt

Output Power ..... 150 mW 8 Ohm (10% THD) for built-in speaker
5 mW per channel for headphones

Headphone Jack ..... 1/8 Inch (3.5 mm), 32 Ohm

Dimensions (HWD) ..... $3\frac{1}{2} \times 6\frac{5}{8} \times 1\frac{1}{4}$ Inches
(90 × 167 × 32 mm)

Weight:
Without Batteries ..... 9.87 oz (280 g)
With Batteries ..... 12 oz (340 g)

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

NOTES

Limited Ninety-Day Warranty

This product is warranted by RadioShack against manufacturing defects in material and workmanship under normal use for ninety (90) days 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 products may be used in the performance of warranty service. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period.

This warranty does not cover: (a) damage or failure caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, lightning or other incidence of excess voltage or current; (b) any repairs other than those provided by a RadioShack Authorized Service Facility; (c) consumables such as fuses or batteries; (d) cosmetic damage; (e) transportation, shipping or insurance costs; or (f) costs of product removal, installation, set-up service adjustment or reinstallation.

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

RadioShack Customer Relations, Dept. W, 100 Throckmorton St., Suite 600, Fort Worth, TX 76102

We Service What We Sell *3/97*

RadioShack
A Division of Tandy Corporation
Fort Worth, Texas 76102

4A8 Printed in China