OWNER'S MANUAL

DX-392

PLL ALL-BAND PORTABLE RECEIVER WITH CASSETTE RECORDER

Please read before using this equipment.

Cat. No. 20-219B

FEATURES

Your Radio Shack DX-392 PLL All-Band Portable Receiver with Cassette Recorder brings the voices of the world to you. In the 13 international short-wave (SW) bands, you can hear news broadcasts and other programs from sources such as the British Broadcasting Company, Radio Cairo, and Radio Moscow.

You can get emergency information firsthand by listening to amateur radio broadcasts, which include single sideband (SSB) voice transmissions and continuous wave (CW) Morse code transmissions.

In the longwave (LW) band, you sometimes hear hurricane reports, ship-to-shore calls, and other marine and aeronautical services. You can tune to local broadcasts in the FM and medium-wave (MW) bands. (In the United States, we commonly call the MW band the AM band.) In addition, you can use the built-in cassette recorder to record your favorite programs live or at a preset time.

Special features include:

Digital Synthesized Receiver — ensures accurate, drift-free tuning.

Large, Fast-Response Display — lets you quickly and easily view the time, band and frequency, signal strength, and other indicators.

Dual Time — lets you set a primary clock to your local time and a secondary clock to another time zone so you can quickly check the time in another part of the world.

Scan Tuning — lets you quickly find stations.

Memory Tuning — stores up to 54 frequencies in memory so you can quickly select your favorite stations.

Direct-Access Tuning — lets you use the keypad to directly enter a frequency you want to listen to.

Rotary Tuning Adjustment — lets you select a higher tuning increment for faster tuning, select a lower tuning increment for fine tuning, or lock the rotary tuning dial to prevent you from accidentally changing the frequency.

Control Lock — prevents you from accidentally changing a setting.

Alarm (Standby) — lets you set the buzzer to sound or the receiver to turn on to wake you at a specified time.

Sleep Timer — lets you set the receiver to turn off after a preset length of time (15, 30, 60, or 90 minutes), so you can fall asleep as you listen to it.

MW Step Setting — lets you choose the correct setting for whatever part of the world you are in.

AM RF Gain Control — lets you adjust the receiver's sensitivity when you listen to SW to provide the best possible reception.

Narrow/Wide Control — lets you reduce interference from other stations when you listen to SW, MW (AM), and LW broadcasts.

BFO Controls — let you tune to stations that transmit in continuous wave (CW) and single sideband (SSB).

Built-In Cassette Recorder — lets you record and play back programs.

Standby Recording — lets you record your favorite program at a preset time.

Beat Cut Switch — reduces the hum or whistling sound sometimes heard when recording AM broadcasts.

Built-In Condenser Microphone — lets you make live recordings.

Three Power Options — let you choose from internal batteries, standard household AC power (requires an AC adapter), or DC vehicle battery power (requires a DC adapter) so you can use the receiver just about anywhere.

Battery Power Indicator — lets you know when the batteries need to be replaced.

Back-Up Battery Power — keeps the clock running, protects the stations stored in memory, and powers the display if the receiver's primary power source is interrupted.

Memo Pad — lets you record helpful information such as the memory location numbers of your favorite stations.

We recommend you record the serial number of your receiver here. The number is inside the battery compartment.

Serial Number_____

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SETTING THE MW (AM) TUNING INCREMENT

In the United States, the Federal Communications Commission (FCC) assigns frequencies for stations in the MW band in 10-kilohertz increments. (In the United States, we commonly call the MW band the AM band.) In Europe and some other parts of the world, MW frequencies are assigned in 9-kilohertz increments.

The MW STEP switch is located inside the battery compartment. Before you install the back-up batteries, set the switch to **9k** or **10k** using the following guidelines:

- If you are in the United States, Canada, or another North or South American country, be sure the switch is set to **10k**.
- If you are in a country where the AM frequency increments are 9 kHz, set the switch to **9k**.

INSTALLING BACK-UP BATTERIES

Back-up batteries power the receiver's clock and the display and save the stations stored in memory if the receiver's primary power source is interrupted.

The receiver uses three AA batteries for back-up power. For the best performance, we recommend alkaline batteries, such as Radio Shack Cat. No. 23-552.

Note: You cannot operate the receiver using only the back-up batteries. If you press **POWER** when the back-up batteries are the only available power source, **E** flashes on the display.

Follow these steps to install the back-up batteries.

1. Remove the battery compartment's cover by pushing the cover in the direction of the arrow.
2. Install three AA batteries, according to the polarity symbols (+ and –) marked next to the compartment. For easy removal, place the batteries on top of the lift-out ribbon.

3. Replace the cover, or install additional batteries for primary power as described in "Internal Battery Power."

To check the back-up batteries' power level, disconnect the receiver from the primary-power source. Then look at the receiver's display. If it is dim, replace the back-up batteries.

CONNECTING TO PRIMARY POWER

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

Internal Battery Power

Your receiver uses four D batteries. For the best performance, we recommend alkaline batteries, such as Radio Shack Cat. No. 23-550.

Follow these steps to install batteries for use as the primary power source.

1. Remove the battery compartment's cover by pushing the cover in the direction of the arrow.
2. Slide four D batteries into the compartment, according to the polarity symbols (+ and –) marked next to the compartment. For easy removal, place the batteries on top of the lift-out ribbon.
3. Replace the cover.

To check the primary-power batteries, turn off the receiver. The battery power indicator appears on the display for several seconds. Fresh batteries show a power level of 7. If the indicator shows a power level of 2 or below, replace the primary-power batteries.

Note: If you press **RADIO POWER** to turn on the receiver when the primary-power batteries are dead, **E** flashes on the display if back-up batteries are installed.

AC Power

With an optional AC adapter, such as Radio Shack Cat. No. 273-1664, you can power the receiver from standard AC power.

Caution: You must use an AC adapter that supplies 6 volts with the center tip set to negative. It must deliver at least 400 milliamps, and its plug must properly fit the receiver's **DC IN 6V** jack. Using an adapter that does not meet these specifications could damage the

receiver or the adapter.

Follow these steps to use AC power.

1. Set the adapter's voltage switch to **6V**.
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.
3. Insert the barrel plug into the receiver's **DC IN 6V** jack.
4. Plug the adapter into a standard AC outlet.

Note: Using an adapter disconnects the primary power batteries.

DC Power

With an optional DC adapter, such as Radio Shack Cat. No. 270-1562, you can power the receiver from your vehicle's battery.

Cautions:

- You must use a DC adapter that supplies 6 volts with the center tip set to negative. It must deliver at least 400 milliamps, and its plug must properly fit the receiver's **DC IN 6V** jack. Using an adapter that does not meet these specifications could damage the receiver or the adapter.
- To protect your vehicle's electrical system, be sure the adapter is connected to the cigarette-lighter socket only when it is also connected to the receiver.

- Follow these steps to use DC power.

1. Set the adapter's voltage switch to **6V**.
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.
3. Insert the adapter's barrel plug into the receiver's **DC IN 6V** jack.
4. Insert the adapter's plug into the vehicle's cigarette-lighter socket.

Note: Using an adapter disconnects the primary-power batteries.

USING THE FOLDING STAND AND MEMO PAD

You can position the receiver more securely and possibly improve the sound by resting the receiver on its stand.

Lift the latch on the back of the receiver to open the stand. You can use the memo pad under the receiver's stand to record helpful information, such as the memory location numbers of your favorite stations.

USING THE RECEIVER

TURNING THE RECEIVER ON/OFF

Press **RADIO POWER** to turn on the receiver, then adjust the volume.

The display shows the band, frequency, and signal strength. (A reading of 7 indicates the strongest signal.)

Press **RADIO POWER** again to turn off the receiver.

TUNING

Selecting the Band

Press **FM**, **MW**, **LW**, or **SW** to select the band. (Press **MW** for AM.) To select a smaller band within the SW band, press **METER**, then enter the desired band by pressing its labeled button on the keypad.

Direct-Access Tuning

Follow these steps to directly tune to a station.

1. Press **FREQ**. The frequency display disappears.

2. Press the number buttons (and decimal button where appropriate) to enter the frequency.

   If you make a mistake, press **C** (cancel) to erase the last digit.

   If you wait more than 15 seconds to press a button, the previous frequency returns to the display and you must begin again at Step 1.

3. Press **ENTER**. The selected frequency appears.

Using the Rotary Dial

You can select a higher or lower frequency by turning the **ROTARY TUNING** knob up or down.

Set **FAST/FINE/LOCK** to select the rotary tuning increments or to lock the **ROTARY TUNING** dial. If you select **FAST**, the rotary tuning increments are the same as when you use the **MANUAL/AUTO** ∨ or ∧ keys. If you select **FINE**, the tuning increments are smaller so you can fine tune the frequency, as shown in the following table.

Band	Fast	Fine
FM	0.1 MHz	0.05 MHz
LW	9 kHz	1 kHz
MW (AM)	9/10 kHz	1 kHz
SW	0.005 MHz	0.001 MHz

You can also set **FAST/FINE/LOCK** to lock the **ROTARY TUNING** dial. This prevents you from accidentally changing the frequency.

Note: This locks only the **ROTARY TUNING** dial. For information about locking the front-panel buttons, see “Locking the Controls” on Page 22.

Tuning with the Arrow Keys

You can select a lower or higher frequency by pressing **MANUAL/AUTO** ∨ or ∧ . The frequency changes in the following increments.

Band	Tuning Increment
FM	0.1 MHz
LW	9 kHz
MW (AM)	9 or 10 kHz (see "Setting the MW (AM) Tuning Increment" on Page 6)
SW	0.005 MHz

Scanning

To automatically tune up or down to the next active frequency in the selected band, press and hold down **MANUAL/AUTO** ∨ or ∧ for about 2 seconds. The receiver scans up or down the selected band and tunes to the first frequency it finds with a strong signal.

To scan for a frequency in one of 13 shortwave bands, press **METER**. Then press the correct button on the numeric keypad to select the shortwave band.

When scanning in a smaller band, the receiver searches only within the selected band and stops at the upper and lower limits of the band.

See "International Frequencies" on Page 23 for a list of the shortwave bands.

Note: When scanning, the receiver only searches for frequencies with strong signals. To search for stations with weaker signals, use one of the manual tuning methods.

Memory Tuning

For easy selection, you can store the frequencies of your favorite stations in memory. You can store up to 18 SW and 18 FM frequencies, and up to 9 frequencies in each of the other bands.

Follow these steps to store a frequency into memory.

1. Use direct-access or manual tuning to tune to the frequency you want to store.
2. Press **M**.
3. While **M** flashes, enter a memory location code using the numeric keypad. For SW and FM bands, select from 1–9 and 01–09. For other bands, select from 1–9. The frequency is stored, **M** stops flashing, and the display shows the memory location code

Note: If you wait more than 15 seconds to press a memory location code number, **M** stops flashing and you must begin again at Step 2.

To select a stored frequency, press **FM**, **MW**, **LW**, or **SW** to select the band. Then enter the memory location code.

ADJUSTING THE ANTENNA

For the best reception, adjust the telescoping antenna for the band you want to listen to.

FM — Fully extend the antenna and rotate it for the best reception.

LW and MW (AM) — Rotate the receiver. The receiver uses the internal antenna for the LW and MW (AM) bands.

SW — Fully extend the antenna and point it straight up.

CONNECTING AN EXTERNAL ANTENNA

To improve SW reception, you can connect a portable external antenna (such as Radio Shack Cat. No. 278-1374) directly to the telescoping antenna or you can make an antenna using a shortwave antenna kit (such as Radio Shack Cat. No. 278-758).

Follow the antenna's supplied instructions to connect the receiver to the antenna.

ADJUSTING SPECIAL TUNING CONTROLS

Several controls affect the receiver's sound. This section explains how to adjust these controls.

FM Mono/FM Stereo

To improve reception for weak FM stereo stations, set **FM MONO/FM STEREO** to **FM MONO**. The signal becomes monaural, but the sound might improve. To return to a stereo signal, set **FM MONO/FM STEREO** to **FM STEREO**.

AM Narrow/AM Wide

To reduce interference from adjacent stations in the SW, MW, or LW bands, set **AM NARROW/AM WIDE** to **AM NARROW**.

AM RF Gain

The **AM RF GAIN** control affects signal strength for SW reception. If the signal is weak, turn **AM RF GAIN** toward **MAX**. If the sound is distorted, turn **AM RF GAIN** toward **MIN**.

BFO Switch and BFO Dial

Some SW and LW stations transmit in Morse Code using a form of transmission called continuous wave (CW). Some SW stations use a special type of voice transmission called single sideband (SSB).

To tune to a CW or SSB station, select the band and frequency and adjust the antenna. In addition, set the **BFO** switch to **ON**. Then, beginning at its midpoint, slowly adjust the **BFO** dial until the reception becomes clear.

For the FM and MW bands and for SW stations that do not transmit in SSB or CW, set the **BFO** switch to **OFF**. The **BFO** dial has no effect when the **BFO** switch is set to **OFF**.

Tone

In all bands, adjust **TONE** for the best sound.

Silencing the Alarm

When the display shows the alarm time, the radio turns on or the buzzer sounds and flashes on the display.

After several seconds, the buzzer's volume increases. After a few more seconds, the volume increases again.

The buzzer automatically stops or the receiver automatically turns off after 60 minutes. To silence the alarm sooner, press **RADIO POWER**. The flashing disappears and the alarm sounds again the next day at the set time.

Turning the Alarm Off/On

To turn off the alarm so it does not sound again, press **STANDBY**. While **STANDBY** flashes, press **C**.

If you then want to set the alarm again, press **STANDBY**. While **STANDBY** flashes, press **ENTER**.

USING THE SLEEP TIMER

The sleep timer sets the receiver to turn off after a length of time you set, so you can fall asleep as you listen to the receiver.

1. When the receiver is off, press **SLEEP**. The receiver turns on, and appears on the display.
2. Repeatedly press **SLEEP** until the desired amount of sleep time (15, 30, 60, or 90 minutes) appears on the display.
3. Tune to the desired station.

After the amount of time you set in Step 2, the receiver turns itself off. To turn off the receiver sooner, press **RADIO POWER**.

MAKING A RECORDING

LOADING A CASSETTE TAPE

1. Press **STOP/EJECT** ■ to open the cassette compartment's door.
2. Use your finger or a pencil to turn the cassette's hub and take up any slack.

Note: Avoid touching the tape. Fingerprints attract dust and dirt that can affect sound quality.

3. Insert the cassette into the compartment with the open side up, full reel to the right, and the desired tape side facing you.
4. Close the compartment's door.

Your receiver has two clocks. We recommend you set the primary clock for local time and the secondary clock for UTC (Coordinated Universal Time — formerly called Greenwich Mean Time), because most shortwave stations announce broadcast times in UTC.

The time zone map on the back of the receiver shows the difference in hours between UTC and each time zone. To determine your local time, tune your receiver to a time standard frequency (see “Time Standard Frequencies” on Page 24) and get the current UTC time. Then add or subtract the specified number of hours from UTC time. During Daylight Saving Time, subtract 1 more hour.

SETTING THE CLOCKS

Follow these steps to set each clock. Both clocks display the time in the 24-hour format (0:00–23:59).

1. Repeatedly press the right **DUAL TIME** button to select the clock you want to set. 2 appears when the secondary clock is selected and disappears when the primary clock is selected.
2. Press **TIME SET**. **TIME SET** flashes on the display.
3. While **TIME SET** flashes, set the correct time by pressing the number buttons. Do not precede single-digit hours with a 0. For example, enter **930** for 9:30 AM.

   If you make a mistake, press **C** (cancel) to erase the last digit.

   Note: If you wait more than 15 seconds to press a button, **TIME SET** stops flashing and you must begin again at Step 2.
4. Press **ENTER**. The clock starts running from the time you set.

Changing the Clock Display

To change from one clock display to the other, press the right **DUAL TIME** button. appears or disappears to show you which clock you are viewing.

To briefly change the clock display, hold down the left **DUAL TIME** button. Release the left **DUAL TIME** button to return to the previous clock display.

USING THE ALARM (STANDBY) FEATURE

You can set a buzzer to sound or have the radio turn on at a specified time.

The alarm sounds when the current clock display (either primary or secondary) shows the alarm time. Be sure the clock display is set to show the desired clock when the alarm time arrives.

For example, you can use the alarm to remind you to tune to a foreign broadcast. Set the secondary clock for UTC, set the alarm for the UTC broadcast time, and be sure the display shows the secondary clock.

Setting the Alarm

1. Press **STANDBY**. **STANDBY** flashes on the display and the current alarm time appears.

2. While **STANDBY** flashes, press the number buttons to enter the alarm time.

   If you make a mistake, press **C** (cancel) to erase the last digit.

   Note: If you wait more than 15 seconds to press a button, **STANDBY** stops flashing and you must begin again at Step 1.

3. Press **ENTER**.

   The clock display returns after a few seconds. **STANDBY** stops flashing and remains on the display.

4. Set **STANDBY BUZZER/RADIO** to **BUZZER** to set the buzzer to sound or to **RADIO** to set the radio to turn on at the alarm time.

PLAYING A CASSETTE TAPE

1. Set **STANDBY REC** to **OFF**.

2. Set **TAPE SELECT** to either **NORMAL** or **CrO_2** according to the type of tape you are going to play.

3. Press **PLAY ◀**. The PLAY indicator lights.

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

5. To stop the tape, press **STOP/EJECT ■**. Press **STOP/EJECT ■** again to open the cassette compartment's door and remove the cassette tape.

Notes:

- To temporarily stop playback, press **PAUSE ▮▮**. To resume playback, press **PAUSE ▮▮** again.
- At the end of a tape, the tape motor automatically stops and the selected button (**PLAY ◀**, **RECORD ●**, **CUE/FAST-F ◀◀**, or **REVIEW/REWIND ▶▶**) pops up.
- To play the other side, turn the cassette tape over.

Fast-Forward and Rewind

Press **CUE/FAST-F ◀◀** to rapidly advance a tape. Press **REVIEW/REWIND ▶▶** to quickly rewind a tape. When the tape reaches the desired point, press **STOP/EJECT ■**.

Caution: To avoid damaging the tape, do not go directly from rewind to fast-forward or from fast-forward to rewind without pressing **STOP/EJECT ■** first.

Cue and Review

Holding down **CUE/FAST-F ◀◀** while playing a cassette tape lets you cue (play the cassette tape at high speed) so you can quickly locate any desired section on the tape. When you release **CUE/FAST-F ◀◀**, the recorder returns to normal play.

Holding down **REVIEW/REWIND ▶▶** after you press **PLAY ◀** lets you review (play the cassette tape in reverse at high speed). When you release **REVIEW/REWIND ▶▶**, the recorder returns to normal play.

RECORDING

Recording from the Radio

1. Set **STANDBY REC** to **OFF**.
2. Load the cassette tape you want to record on.
3. Set **TAPE SELECT** to either **CrO_2** or **NORMAL** according to the tape you loaded.
4. Tune to the desired station.
5. Adjust **VOLUME** to a comfortable listening level.

   Note: The Automatic Level Control automatically adjusts the volume recorded on the tape.
6. Press **RECORD** ● to begin recording. **PLAY** ◄ automatically goes down and the RECORD indicator lights.

   The DX-392 automatically stops when the tape reaches the end. To record the other side, turn the tape over.

   Caution: Never attempt to force down **RECORD** ●. If you have removed your cassette's erase-protection tabs, you cannot press **RECORD** ●. See "Accidental Erasure Prevention" on Page 32.
7. To temporarily stop recording, press **PAUSE** ▮▮. Press **PAUSE** ▮▮ again to resume recording.
8. When the recording is complete, press **STOP/EJECT** ■ twice, and remove the cassette from the recorder.

Recording from the Radio Using the Standby Feature

This feature lets you record your favorite program at a preset time.

1. Turn on the receiver and tune to the desired station.
2. Turn off the receiver.
3. Set **STANDBY REC** to **ON**.
4. Set **STANDBY BUZZER/RADIO** to **RADIO**.

5. Press **STANDBY**.

6. While **STANDBY** flashes, enter the starting time of the program you want to record. Then press **ENTER**. **STANDBY** stops flashing.

   Note: Be sure the clock display is set to show the desired clock when the alarm time arrives.

7. Load a tape with adequate length for the period you are going to record. For instance, load a C-60 tape for recording a 30-minute program.

8. Set **TAPE SELECT** to either **CrO_2** or **NORMAL** according to the type of tape you loaded.

9. Press **RECORD** ● (**PLAY** ◄ automatically goes down). The radio turns on at the preset time and the recorder starts recording. The tape stops automatically at the end of the tape, but the radio keeps playing until you turn it off.

Recording AM Broadcasts

Sometimes you might hear a hum or whistling sound when recording an AM broadcast. To reduce or eliminate this sound, set the **BEAT CUT** switch to the position that gives you the best recording.

Recording Using the Built-In Microphone

Your cassette recorder has a built-in condenser microphone on the front. To record with the built-in microphone, follow the steps in “Recording from the Radio” on Page 19. But, instead of tuning to a radio station in Step 4, simply position the DX-392 near the source you are recording. Then continue with Step 6.

ADDITIONAL FEATURES

CONNECTING HEADPHONES

For private listening and for stereo sound during FM stereo broadcasts, you can connect optional stereo headphones with a 1/8-inch plug. Your local Radio Shack store sells a wide selection of stereo headphones.

Insert the headphones' plug into the receiver's jack. This disconnects the receiver's internal speaker.

When you connect stereo headphones and tune to a stereo broadcast, ST appears on the display. For the best reception, fine tune the receiver until ST remains steady.

Listening Safely

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

- 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.

LIGHTING THE DISPLAY

Press **LIGHT** to briefly light the display.

The display light automatically turns off about 15 seconds after you release **LIGHT**. Press **LIGHT** again to turn it off sooner.

LOCKING THE CONTROLS

The lock feature prevents you from accidentally turning the receiver on or off, changing the band or frequency, or selecting front-panel buttons.

Set the lock switch to 🔑 to lock all the front-panel buttons and the **ROTARY TUNING** dial. You can still adjust **VOLUME**, **TONE**, and other controls. Set the switch to the other position to unlock the buttons.

Note: To lock only the **ROTARY TUNING** dial, see "Using the Rotary Dial" on Page 10.

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-392.

REFERENCE SOURCES

Many books and magazines about shortwave listening are available through your local library or newsstand. Consult sources such as the *World Radio Handbook*, *Radio Amateur's Handbook*, *Passport to World Band Radio*, *Monitoring Times*, and *Popular Communications*. 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 ALLOCATIONS

Certain bands are set aside for specific purposes.

Amateur Radio Frequencies

Tuning to the amateur radio frequencies can be interesting and helpful, because amateur radio operators often broadcast emergency information when other means of communication break down.

Amateur radio operators use the following bands. Portions of these bands are set aside for continuous wave (CW) Morse code communication or for single sideband (SSB) voice communication, as shown below.

160 meters:

1,800–2,000 kHz: SSB

80 meters:

3,500–3,800 kHz: CW

3,800–4,000 kHz: SSB

40 meters:

7,000–7,150 kHz: CW
7,150–7,300 kHz: SSB

20 meters:

14,000–14,200 kHz: CW
14,200–14,350 kHz: SSB

15 meters:

21,000–21,250 kHz: CW
21,250–21,450 kHz: SSB

10 meters:

28,000–28,500 kHz: CW
28,500–29,700 kHz: SSB

Note: These ranges are not precisely observed everywhere in the world.

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 (in meters)	Frequency Range (in MHz)
120 *	2.300–2.495
90 *	3.200–3.400
75 *	3.900–4.000
60 *	4.750–5.060
49	5.900–6.200
41**	7.100–7.350
31	9.400–9.990
25	11.600–12.100
21	13.600–13.800
19	15.100–15.800
16	17.480–17.900
13	21.450–21.750
11	25.600–26.100

* These bands are reserved for stations in tropical areas.

** Interference is heavy in the 41m band (7.100–7.300 MHz) because amateur radio operators and international stations share this range.

Aircraft Frequencies

Aircraft on international routes sometimes use SW. Most transmissions are in SSB, although you can still hear some AM transmissions. Here are some bands where you might hear aircraft communications.

4,650–4,750 kHz

6,545–6,765 kHz

8,815–9,040 kHz

11,175–11,400 kHz

13,200–13,360 kHz

15,010–15,100 kHz

17,900–18,030 kHz

Ships and Coastal Station Frequencies

Most transmissions from ships and coastal stations are in SSB and CW. You can hear these transmissions in the following bands.

2,000–2,300 kHz*

4,063–4,139 kHz

4,361–4,438 kHz

8,195–8,181 kHz

12,330–12,420 kHz

13,107–13,200 kHz

16,460–16,565 kHz

* The Coast Guard and small boats use this band, with 2,182 kHz set aside as the international distress and emergency channel.

Time Standard Frequencies

The following frequencies announce the exact time of day at specified intervals.

WWV in Fort Collins, Colorado:

2,500 kHz

5,000 kHz

10,000 kHz

15,000 kHz

20,000 kHz

CHU in Canada: 7,335 kHz

VNG in Australia: 4,500 and 12,000 kHz

Longwave Band

The 150–519 kHz range is known as the longwave band. Most stations in this range serve as beacons for aircraft and marine navigation by continuously transmitting their call letters. Reception for this range is best between 6:00 PM and midnight (your time).

Some ships also use this range, with 500 kHz set aside as an international distress and emergency station.

Most stations in this range use CW (Morse code), although some use AM voice transmission for weather broadcasts.

LISTENING GUIDE

The following list contains some of the more frequently heard 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

kHz	Station	Location	Remarks
3,223	Radio SR	Swaziland	
3,265	Radio Mozambique	Maputo, Mozambique	
3,300	Radio Cultural	Guatemala City, Guatemala	Religious Programs
3,380	Radio Iris	Esmeraldas, Ecuador	Programs in Spanish
3,385	FR3	Cayenne, French Guiana	Programs in French
3,396	Radio Kaduna	Kaduna, Nigeria	
4,750	Radio Bertoua	Bertoua, Cameroon	

kHz	Station	Location	Remarks
4,755	Imo Regional Radio	Imo, Nigeria	
kHz	**Station**	**Location**	**Remarks**
4,777	Radio/TV Gabon	Libreville, Gabon	Programs in French
4,795	Radio Nueva America	La Paz, Bolivia	Programs in Spanish
4,820	Radio Paz y Bien	Ambala, Ecuador	Programs in Spanish
4,832	Radio Reloj	San Jose, Costa Rica	Programs in Spanish
4,855	Radio Clube do Para	Belem, Brazil	Programs in Portugese

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kHz	Station	Location	Remarks
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	Programs in Spanish
4,965	Radio Santa Fe	Bogota, Colombia	Programs in Spanish
4,980	Ecos del Torbes	San Cristobal, Venezuela	Programs in Spanish
5,020	Solomon Islands Broadcasting Service	Honiara, Solomon Islands	
5,057	Radio Gjirokaster	Gjirokaster, Albania	Programs in Albanian
5,950	Guyana Broadcasting Service	Georgetown, Guyana	

kHz	Station	Location	Remarks
5,954	Radio Casino	Puerto Limon, Costa Rica	

kHz	Station	Location	Remarks
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	Programs in Chinese
6,045	Radio Australia	Lyndhurst, Australia	
6,055	Nihon Shortwave Broadcasting Company	Tokyo, Japan	Programs in Japanese

kHz	Station	Location	Remarks
6,060	Radio Nacional	Buenos Aires, Argentina	Programs in Spanish
6,075	Radio Sutatenza	Bogota, Colombia	Programs in Spanish
6,090	Radio Luxembourg	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	Programs in 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	

kHz	Station	Location	Remarks
9,530	Spanish Foreign Radio	Madrid, Spain	

kHz	Station	Location	Remarks
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 Service	Rome, Italy	
9,610	Radio-TV Algeria	Algiers, Algeria	Programs in Arabic
9,620	Radio Berlin International	Berlin, Germany	

kHz	Station	Location	Remarks
9,645	Radio Norway	Oslo, Norway	
9,720	Radio Iran	Tehran, Iran	Programs in Farsi
9,745	HCJB	Quito, Ecuador	
9,770	Austrian Radio	Vienna, Austria	
9,800	Radio Kiev	Kiev, Ukraine	
9,835	Radio Budapest	Budapest, Hungary	
10,040	Voice of Vietnam	Hanoi, Vietnam	
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	

kHz	Station	Location	Remarks
11,745	Voice of Free China	Taipei, Taiwan	

kHz	Station	Location	Remarks

11,815	Radio Japan	Tokyo, Japan	
11,825	Radio Tahiti	Papeete, Tahiti	Programs in 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	

kHz	Station	Location	Remarks
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	
15,038	Saudi Arabian Broadcasting Service	Riyadh, Saudi Arabia	Programs in Arabic
15,084	Voice of Iran	Tehran, Iran	Programs in Farsi
15,135	Radio Moscow	Moscow, Russia	
15,165	HCJB	Quito, Ecuador	
15,190	ORU	Brussels, Belgium	

kHz	Station	Location	Remarks
15,205	All India Radio	New Delhi, India	
kHz	**Station**	**Location**	**Remarks**
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	Programs in Spanish
15,465	Radio Pakistan	Islamabad, Pakistan	Programs in Urdu

kHz	Station	Location	Remarks
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	Programs in Arabic
25,790	Radio RSA	Johannesburg, South Africa	

BIRDIES

Birdies are the products of internally generated signals that make some frequencies difficult or impossible to receive. If you program one of these frequencies, you hear only noise on that frequency. The most common birdies to watch for are listed below.

450 kHz	18,000 kHz
3,844 kHz	20,490 kHz
9,000 kHz	21,835 kHz
10,250 kHz	21,868 kHz

TAPE TIPS AND TECHNIQUES

The following suggestions will help you get the best performance from your cassettes and cassette deck.

STORING YOUR CASSETTES

- Keep them away from excessive dust and dirt.
- Do not expose them to moisture or high humidity.
- Keep them away from strong magnetic fields that can be generated by other electronic devices (transformers, motors, and so on).
- Store them in protective plastic containers. Your local Radio Shack store offers a complete selection of tape storage containers.

ERASING TAPES

Each time you record on a cassette tape, the previous recording is automatically erased.

If you want to erase a tape without making a new recording, load the tape into the cassette compartment and press **RECORD** ●. The deck erases the tape as the tape passes the record head. If you want to quickly erase a tape, you might prefer to use a bulk tape eraser, available at your local Radio Shack store. It erases both sides of an entire tape in a few seconds.

Note: The built-in microphone records any sounds in the area onto the tape as you record. Be sure to place the radio in a quiet area if you want to erase a tape by recording over it.

ACCIDENTAL ERASURE PREVENTION

All cassettes have erase-protection tabs. When in place, these tabs let you record on the tape. Once you remove these tabs, you cannot press **RECORD** ●. To avoid erasing or recording over Side A (or 1), break off the Side A (or 1) tab with a screw

driver. If you wish to protect Side B (or 2), remove the Side B (or 2) tab.

To record on the tape again, place a piece of strong plastic tape over the erase-protection tab holes.

Note: Removal of the erase-protection tab does not prevent a bulk eraser from erasing the tape.

Caution: When using a cassette that has had the erase-protection tabs broken off, do not try to force down **RECORD** ●. Doing so might damage the recording mechanism.

TAPE TENSION

After you play a cassette tape several times, the tape might become tightly wound on the reels. This can cause playback sound quality to deteriorate.

To restore the sound quality, fast-forward the tape from the beginning to the end of one side, then completely rewind it. Then loosen the tape reels by gently tapping each side of the cassette's outer shell on a flat surface.

Caution: Be careful not to damage the cassette when tapping it. Do not touch the exposed tape or allow any sharp objects near the cassette.

CLEANING THE TAPE MECHANISM

After repeated use, dust, lint and tape oxides accumulate on the tape-handling mechanisms. For the best performance and sound quality, clean the record/play heads, pinch rollers, capstans, and erase head after approximately every 20 hours of use. You can use recorder cleaner and cleaning swabs or a convenient head-cleaner cassette. All these cleaning products are available at your local Radio Shack store.

TROUBLESHOOTING

Your receiver should give you years of trouble-free service if you follow the instructions given in this manual. If you have problems, the chart below might help.

If you still have problems after following the suggestions below, take the receiver to your local Radio Shack storefor assistance.

Problem	Cause
Weak or intermittent sound.	• The primary-power batteries are weak. • Antenna needs adjusting. • Metal is blocking the signal. Move the receiver near a window when you use it inside a vehicle or metal frame building. • Frequency needs fine tuning. See “Tuning” on Page 9.
Scan stops when there is no clear signal.	This is caused by birdies. See “Birdies” on Page 31. Using an outdoor antenna might reduce these signals.
Frequency does not change when you turn **ROTARY TUNING**.	**FAST/FINE/LOCK** switch is set to **LOCK**.
ROTARY TUNING and front panel buttons do not respond.	If appears on the display, the lock switch is set to .

RESETTING THE RADIO

If the radio displays random characters or the display does not work properly, you might need to reset it.

Important: This procedure clears all information you stored in the radio's memory. Reset the radio only when you are sure it is not working properly.

1. Remove the battery compartment's cover by pushing the cover in the direction of the arrow.
2. Insert a pointed object, such as a straightened paper clip, into the **RESET** hole inside the battery compartment. Then gently press then release **RESET**.

CARING FOR THE RECEIVER

Your Radio Shack DX-392 PLL All-Band Portable Receiver with Cassette Recorder 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.

Use only fresh batteries of the recommended size and type. Never leave dead or weak batteries in the receiver. They might leak chemicals that can damage the receiver.

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

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

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.

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 your receiver.

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

THE FCC WANTS YOU TO KNOW

Your receiver might cause interference on other radio/TV devices 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 other device.
- Connecting your receiver to an outlet that is on a different electrical circuit from the other device.
- Contacting your local Radio Shack store for help.

SPECIFICATIONS

Circuit:

FMHeterodyne
LW/MW/SWDual-Conversion Heterodyne

Frequency Range:

FM87.5–108 MHz
LW150–519 kHz
MW520–1,710 kHz
SW1.711–29.999 MHz
SW Sub-Bands:
- 2.300 – 2.495 MHz (120 meters)
- 11.600 – 12.100 MHz (25 meters)
- 3.200 – 3.400 MHz (90 meters)
- 13.570 – 13.870 MHz (21 meters)
- 3.900 – 4.000 MHz (75 meters)
- 15.100 – 15.800 MHz (19 meters)
- 4.750 – 5.060 MHz (60 meters)
- 17.480 – 17.900 MHz (16 meters)
- 5.900 – 6.200 MHz (49 meters)
- 21.450 – 21.750 MHz (13 meters)
- 7.100 – 7.350 MHz (41 meters)
- 25.600 – 26.100 MHz (11 meters)
- 9.400 – 9.990 MHz (31 meters)

Antenna:

LW/MWBuilt-In Ferrite
SWTelescoping or Optional External
FMTelescoping
Output700 mW @ 10% THD

Recorder:

Tape Speed$1\frac{7}{8}$ ips (4.76 cm/s) ± 3%
Recording SystemAC Bias
Erasing SystemMagnetic Erasing
Frequency Response125–8000 Hz
Signal to Noise Ratio (Play)Normal 46 dB, Limit 40 dB

Jacks:

External PowerDC IN 6V
Stereo Headphones $\frac{1}{8}$-Inch

Power Sources:

Back-Up3 AA Batteries
Primary(4) D Batteries
AC (Requires Optional Adapter)6V/400mA, Center Tip Negative
DC (Requires Optional Adapter)6V/400mA, Center Tip Negative

Battery Life (Alkaline Batteries):

Back-Up (Radio Off)..... Up to 375 Days
Primary..... 75 Hours Continuous Operation @ 50 mW

Dimensions (HWD) .....$7^{1}/_{2}$ ¥ $11^{7}/_{8}$ ¥ $2^{7}/_{8}$ Inches (192 ¥ 300 ¥ 75 mm)

Weight..... 3.2 lbs (1.4 kg without batteries)

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

Limited Ninety-Day Warranty

This product is warranted by Radio Shack against manufacturing defects in material and workmanship under normal use for ninety (90) days from the date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. EXCEPT AS PROVIDED HEREIN, Radio Shack 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, Radio Shack 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 Radio Shack 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 Radio Shack sales receipt as proof of purchase date to any Radio Shack store. Radio Shack 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 Radio Shack. 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 Radio Shack 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.

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

We Service What We Sell *3/97*

RADIO SHACK
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Fort Worth, Texas 76102

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