

Radio Shack

Cat. No. 21-969



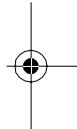
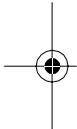
CB/Ham Radio Base Station Antenna

Your Radio Shack CB/Ham Radio Base Station Antenna comes in three easy-to-assemble sections and covers far above and below the traditional CB channels. You can also use your antenna for international, commercial, and 10-meter amateur radio operation with up to 2000 watts. Twin ring tuning makes it easy to tune the input to the antenna for the optimum standing wave ratio (SWR) over a range of frequencies. The antenna is designed as a half wave over a quarter wave variable mutual transductance tuned antenna.

BEFORE YOU BEGIN

Before you begin installation, read this manual and the separate Consumer Product Safety Commission information sheet. For your safety and convenience, plan each step of the installation in advance.

WARNING: When you install an outdoor antenna, use extreme caution. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna touches the 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 remove it yourself!



© 1996 Tandy Corporation.
All Rights Reserved.

Radio Shack is a registered trademark used by Tandy Corporation.
U.S. Patent #4,360,814, Canadian Patent #1,145,456, England Patent #2,046,529.
Other patents pending.





ASSEMBLING THE ANTENNA

We recommend you assemble the antenna on the ground in a flat, open area. Follow these steps to assemble the antenna using the supplied hardware.

1. Slip a $\frac{3}{8}$ -inch lockwasher (A) over the threaded end of the small top section (B), then turn that section clockwise and connect it tightly to the middle section (C).
2. Slip a $\frac{1}{2}$ -inch lockwasher (D) over the threaded end of the middle section (C), then turn that section clockwise and connect it tightly to the bottom section (E).

MOUNTING THE ANTENNA

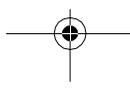
Using the supplied hardware, you can easily mount your antenna to a mast (not supplied), a building's vent pipe or other stationary object.

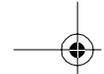
Note: For the best performance, mount your antenna at least 9 feet above the roof of the nearest building and 18 feet above or away from any metal object or structure.

1. Place the supplied U-bolts (F) around the bottom section of the antenna and the mounting location.
2. Slide a clamp (G) over each U-bolt, then slide a lockwasher (H) over the end of each U-bolt.
3. To fasten the U-bolts in place, tighten the supplied hex nuts (I) tightly over the ends of each U-bolt.

Cautions:

- Be careful not to overtighten the hex nuts, otherwise you might damage the antenna.
- Do not use caulk or silicone sealant around any part of your antenna, otherwise moisture might not drain properly from around the antenna. This could damage the antenna or cause it to work improperly.





TUNING THE ANTENNA

Follow these steps to prepare your antenna, and tune it with an SWR meter (not supplied) for use with radio equipment.

Note: Your antenna is pre-tuned to the middle of the CB band (27.205 MHz) for the lowest SWR (standing wave ratio). No tuning is necessary to use your antenna with a CB.

1. Look up the frequency you use most often in the Frequency/Antenna Length table on Page 6, then carefully measure and cut off the recommended length of the antenna's top section.

IMPORTANT! Be sure you cut off only the length recommended to operate on the desired frequency. If you cut off too much of the antenna, you might need to replace the antenna's top section to receive some lower frequencies. If needed, you can purchase a replacement top section through your local Radio Shack store.

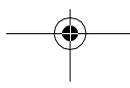
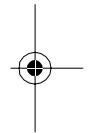
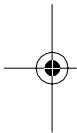
Note: No cutting is needed to operate your antenna at 10-40 meters if you use an antenna tuner.

2. Using an SWR meter, check the SWR at the top and bottom of the band.

Notes:

- If you are using a watt meter, the meter should read full output power at the transmitter, and (after calibration) in the SWR position, SWR should be low (preferably 2:1 or less).
 - The best place to check SWR is at the antenna's coaxial connection. You can also check SWR at the transmitter's coaxial connection.
3. If the SWR is higher at the top of the band than it is at the bottom, turn both tuning rings (A) $\frac{1}{4}$ - to $\frac{1}{2}$ -turn clockwise to lower them.

If the SWR is higher at the bottom of the band than it is at the top, turn both tuning rings $\frac{1}{4}$ - to $\frac{1}{2}$ -turn counter-clockwise to raise them.





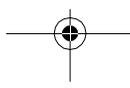
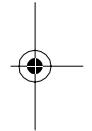
Note: For frequencies higher than 31.571 MHz, position the tuning rings at the top of the threaded section, then skip to Step 5.

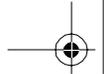
4. Repeat Steps 1 and 2 until the SWR reading is the lowest possible at both ends of the band.
5. To lock the tuning rings in place, turn the top ring clockwise and the bottom ring counterclockwise, so they rest tightly against each other.

TROUBLESHOOTING

If you are unable to obtain an acceptable SWR reading from your antenna, follow these suggestions to see if you can eliminate the problem. If you are unable to eliminate the problem, contact your local Radio Shack store for assistance.

- Be sure the SWR equipment is working properly — check the SWR meter's owner's manual for assistance in operating it.
- Be sure the antenna's mounting location is grounded properly.
- Be sure the antenna is installed at least 9 feet above the roof of the nearest building and 18 feet above or away from any other metal objects in the area.
- Check the coaxial cable and all of its connections. Be sure the cable is not pinched, shorted, broken, or kinked.
- Be sure any excess coaxial cable is not coiled, causing excess SWR.
- Check the equipment installation sequence, and be sure the amplifier is not installed out of phase.
- If you installed an optional ground plane kit on the antenna, be sure the radials are at least 9 feet above the roof.
- Be sure that no water is standing around the base of the antenna and that no caulk or silicone sealant has been used around the bottom of the antenna.





Tips for Eliminating RFI

Your transceiver and antenna system might cause TV or radio frequency interference (RFI) even when it is operating properly. To determine whether your system is causing the interference, turn off the transceiver connected to the antenna. If the interference goes away, your system is causing it. Try one or more of the following suggestions to eliminate the interference.

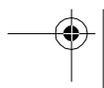
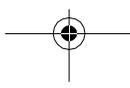
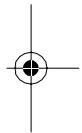
- Be sure that the mast or mounting location is grounded properly.
- Tightly wind the antenna's coaxial cable 6-8 times around the mounting location, then tape the cable in place with weatherproof tape.
- Check the transceiver to be sure it is operating properly.

If you are unable to eliminate the interference, contact your local Radio Shack store for assistance.

SPECIFICATIONS

Maximum Power	2000 Watts
dBI Gain	-9.9
Optimum SWR Range	Less Than 1.5:1 on 11 Meters
Dimensions (Height/Diameter)	17 Feet, 4 ¹ / ₂ Inches × 1 ³ / ₄ Inches (5.3 Meters × 33 mm)
Weight	5 lbs. (2.27 kg)
Supplied Hardware	6 Lockwashers 2 U-Bolts 2 Clamps 4 Hex Nuts

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



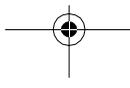
Frequency/Antenna Length Table

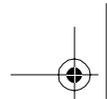
FREQ. (MHz)	TOP SECTION LENGTH (Inches)	
	Remaining ▼	Cut Off ▼
28.016	64	8
28.106	63	9
28.267	62	10
28.372	61	11
28.468	60	12
28.565	59	13
28.630	58	14
28.723	57	15
28.840	56	16
28.956	55	17
29.102	54	18
29.205	53	19
29.328	52	20
29.456	51	21
29.528	50	22
29.633	49	23
29.743.	48	24
29.890	47	25
29.965	46	26
30.090	45	27
30.204	44	28

FREQ. (MHz)	TOP SECTION LENGTH (Inches)	
	Remaining ▼	Cut Off ▼
30.324	43	29
30.397	42	30
30.504	41	31
30.590	40	32
30.679	39	33
30.807	38	34
30.900	37	35
31.030	36	36
31.571	36	36
31.695	35	37
31.754	34	38
31.980	33	39
32.130	32	40
32.295	31	41
32.404	30	42
32.535	29	43
32.685	28	44
32.816	27	45
32.921	26	46
33.041	25	47
33.117	24	48



NOTES





RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for 90 days from date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your Radio Shack sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO EXPRESS WARRANTIES AND ANY IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

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

We Service What We Sell

9/94

RADIO SHACK
A Division of Tandy Corporation
Fort Worth, Texas 76102

12/96

Printed in the USA

