

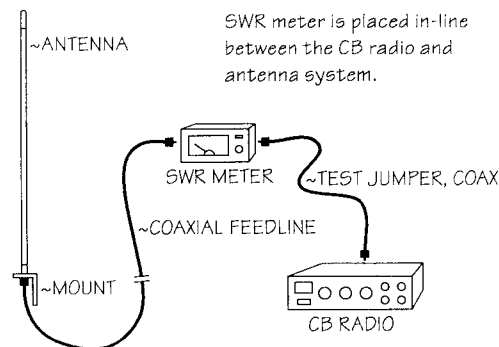
correct this situation. This condition is often corrected by adding a spring and/or quick disconnect to increase the physical height.

Lengthening of the Firestik II and Firefly is accomplished by turning the tuning screw further out (Illustration #1). On Firestik and Road Pal models, it requires tip removal, short slits in the plastic covering and, the separation and upward repositioning of three or more wire turns (Illustration #4). Firestik Designer Series antennas require loosening the allen screws and raising the metal whip (Illustration #3).

**DUAL ANTENNAS:** Measurement and determination of short or long conditions is the same as the single antenna procedure. However, when tuning co-phased antennas, if you adjust one antenna, you should adjust the other in equal amounts to keep them in perfect balance.

**ABOUT SWR METERS:** Even though the meters that are built into some radios are okay for general adjustments, an external meter between the radio and system coax will return the most accurate readings and make your job a bit easier. Radios with built in SWR meters, and external SWR meters always have instructions on how to use the meter. .

#### SWR METER HOOKUP



#### 10 COMMON ERRORS WHICH CREATE SWR PROBLEMS

1. Antenna has not been tuned on vehicle.
2. Poor, or no chassis ground on the antenna mount.
3. Broken, shorted, pinched or kinked coax.
4. Short or open connections at the mount.
5. Antenna tuned without tip and then tip installed (or tip installed, then removed).
6. Antenna mounted too close to other antennas or other interfering objects.
7. Loose or corroded connections.
8. Antenna mounted on side of vehicle without a minimum of 2/3's of its length above the vehicle roof.
9. Improper coax length. If in doubt, use 18 ft..
10. Excess cable wound into small coil (10" or less) can create a choke effect and cause undesirable SWR.

To receive a complete 32 page copy of "Measuring SWR and Things Every CB'er Should Know," send \$1.00 and a bar-coded UPC proof of purchase from any Firestik, Firestik II, Firefly, or Road Pal antenna or kit (\$3.00 without UPC) to Firestik Antenna Co, Tech Support, 2614 E Adams St, Phoenix, AZ 85034-1495.

### Firestik Antenna Company

2614 E Adams St, Phoenix, AZ 85034

tel: 602-273-7151, fax: 602-273-1836

e-mail: [tech@firestik.com](mailto:tech@firestik.com)

web: <http://www.firestik.com>

# USER INSTALLATION GUIDE

## FOR FIRESTIK, FIRESTIK II, FIREFLY & ROADPAL CB ANTENNAS & ACCESSORIES

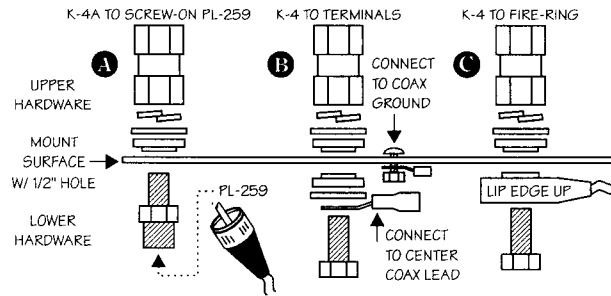
For installation instructions concerning Firestik's line of no-ground-plane antennas write to: Firestik Antenna Tech Support, c/o NGP Instructions, 2614 E Adams St, Phoenix, AZ 85034-1495.

Our catalogs are FREE.\* Contact us by phone at 602-273-7151, fax 602-273-1836 or e-mail [tech@firestik.com](mailto:tech@firestik.com). You may also visit our on-line catalog and web site: <http://www.firestik.com>

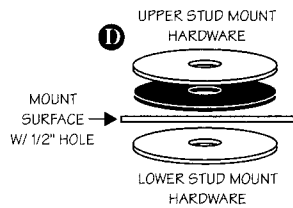
(\*postal fees if outside the US, Canada and Mexico, may apply.)

## STUD MOUNT ASSEMBLY / COAX CONNECTION

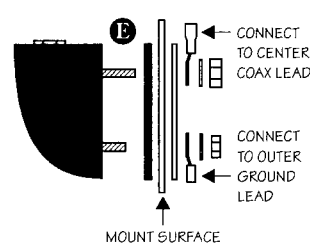
**MOST IMPORTANT:** No continuity should exist between the antenna base (or coupling nut) and the mounting bracket (or mount surface).



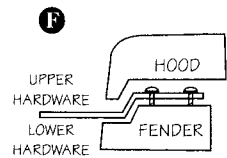
## DISC MOUNT



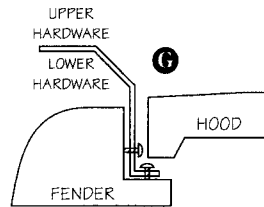
## SIDE MOUNT ASSEMBLY



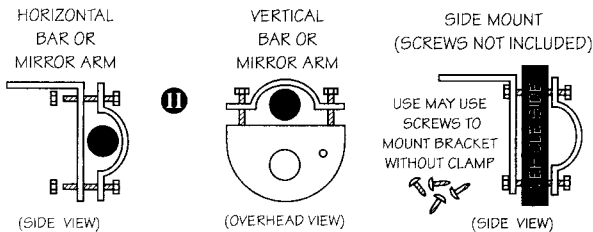
## RAM HOOD MOUNT



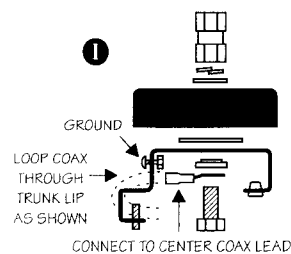
## HOOD CHANNEL MOUNT



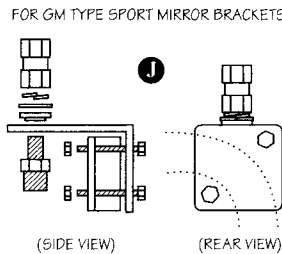
## 3-WAY MOUNTING BRACKETS



## TRUNK LIP MOUNT



## GM MIRROR MOUNT



## ANTENNA LOCATION / ANTENNA LENGTH

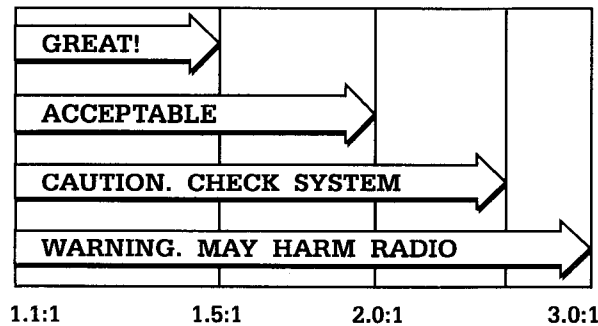
Short antennas, 3 feet or less, are preferred by a growing number of CB users. However, if not installed correctly they can lead to serious CB performance problems. Most of these problems can be corrected by either moving the antenna to a "new location" or replacing it with a "longer antenna." There are two installation rules to follow when performance is deemed more important than looks or convenience:

- 1) Mount antenna as close to vehicle center as possible (away from other antennas/objects).
- 2) Keep at least 2/3's of the antenna's length above the roof of the vehicle.

## TUNING YOUR MOBILE CB ANTENNA

**SETUP:** All tests are to be performed after the antenna has been installed and the coaxial cable and its connections have been checked for shorts or opens. The rubber tip of the antenna must be in place when taking all readings. All testing must be done in an open area. Stay at least 20 feet away from buildings and never perform tests in a garage or carport. The doors, hood and trunk of the vehicle must also be closed. Oversight of these reminders will result in inaccurate readings.

**TESTING:** The SWR meter must be connected between the CB radio and system coax cable (see diagram on reverse side). Measure and record the SWR on channel one (1), twenty (20) and forty (40). The ultimate goal is to achieve an SWR reading below 2.0 to 1 on all channels from one to forty.



If measurements are below 2.0 to 1 on both channels, it isn't necessary to make any adjustments unless you want to fine tune the system to balance the SWR at both ends of the band. However, keep in mind that if SWR, regardless of the reading, is the same on channel 1 and 40, adjustments to the antenna may have a negative effect.

If SWR on channel 40 is greater than channel 1, your antenna is "LONG". Reduction of electrical length will correct this situation. This entails screwing down the tunable tip (Illustration #1: Firestik II, Firefly), or removing the tip, making short slits in the plastic covering, and unwinding and clipping off wire (Illustration #2: Firestik, Road Pal). Firestik Designer Series antennas require loosening the allen screws and lowering the metal whip (Illustration #3).

**ILLUSTRATION #1**  
(bare-hands tunable tip antenna tuning)

**ILLUSTRATION #2**  
(Firestik and Road Pal antenna tuning)

**ILLUSTRATION #3**  
(Firestik Designer Series antenna tuning)

**INCORRECT** (antenna cover removed for illustration) vs **CORRECT** (antenna cover removed for illustration)

**ILLUSTRATION #4**  
(antenna cover removed for illustration)

**NOTE:** The shorter the antenna, the more sensitive it is to adjustments. For example, two turns on a 4 foot antenna might move the SWR by 0.3; the same amount on a 2 foot antenna may move the SWR by 1.0. Make smaller adjustments on shorter antennas.

If SWR on channel 1 is greater than channel 40, your antenna is "SHORT" and increasing the electrical length of the antenna is required to