



## CTUN Installation Considerations VHF Field Tunable Antenna

### CTUN-NB-VHF

The CTUN-NB-VHF is a field tunable antenna that operates in a 3 MHz bandwidth across the frequencies of 150-174 MHz. Once tuned to the desired frequency, the locking mechanism holds the tuning assembly in place. This omni-directional, vertically polarized (from bottom edge) antenna can be concealed in a tissue box on the rear deck of a vehicle, placed between two boards, hidden in a sign, or mounted in countless covert ways.

#### VERIFY:

1. **Part List:** The system package includes CTUN-NB-VHF antenna with cable, mounting feet and Velcro mounting strips. Use only components supplied with the antenna system (Refer to Parts List).

Part	Description	Qty	Inspected By
CTUN-NB-VHF	VHF Narrowband CTUN Antenna	1	
CI-543	Customer Instruction	1	
CK-199	SMA Male to customer connector of choice	1	
HK-177	Hardware Kit: MP-185 Velcro Hook (QTY 3), MP-186 Velcro Loop (QTY 3), H-1348 Circuit board Stand(QTY 2)	1	

2. **Bandwidth:** The tunable VHF antenna has a bandwidth that is 3 MHz wide. This antenna is tunable between the frequencies of 150 MHz and 174 MHz.

#### SET UP:

1. **Procedure:**
  - a. Tune CTUN to the desired frequency (refer to section Tuning section on sheet 2).
  - b. Attach CK-199 to CTUN antenna and radio.
  - c. Attach Velcro (Figure 1) or circuit board stand (Figure 2) to CTUN Antenna for mounting.
  - d. Place antenna where desired.

ATTACH TO BACKSIDE

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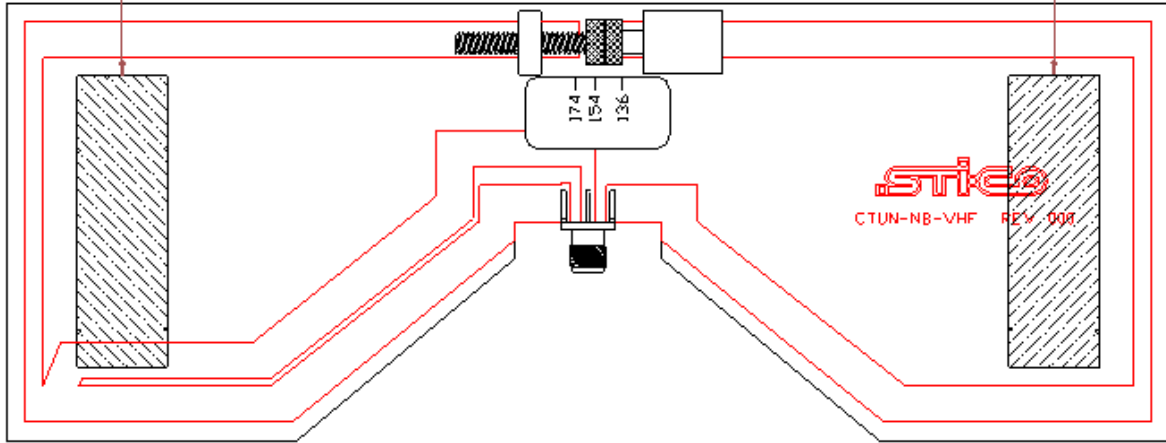


Figure 1

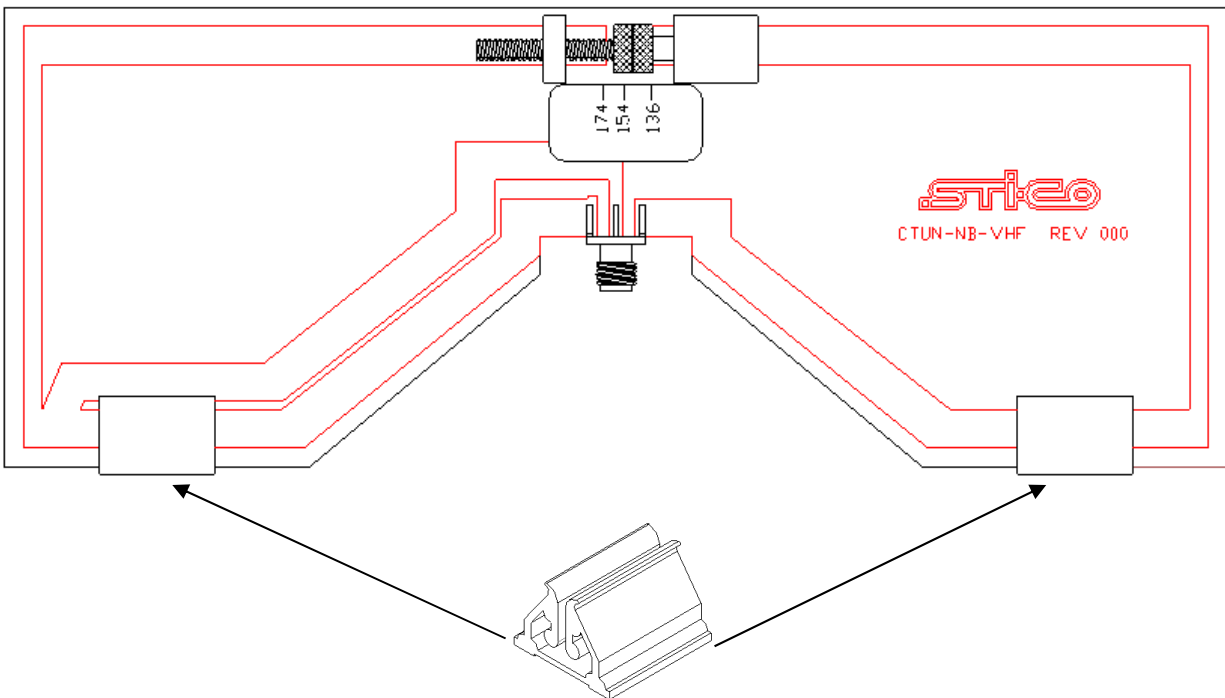


Figure 2



**STOP: Do not power up antenna system until tuned. (See below)**

2. **Tuning: This unit must be tuned prior to attaching to the mobile radio.** Stand antenna vertically, as shown in Figure 2, when tuning. Tuning in the environment that the antenna will be used will improve tuning accuracy. For example, when placing antenna in a cardboard medium the frequency will shift down approximately 3 MHz. A significant increase in temperature will also shift the frequency down and increase the total reflected power.

A network analyzer, site-master, or SWR meter is required so that the antenna is tuned to the correct frequency using the match and tune adjustment until SWR is below 1.5:1 for the frequency(s) needed.

**Warning: STI-CO is not responsible for damage to antenna if the antenna is not matched prior to power being applied. STI-CO is also not responsible for damage to antenna or property if 10W maximum input power is exceeded.**

3. **Testing: Only after being tuned**

Installation testing, if required, must take place at the transmitter side of the feedline. This will ensure that the cable connectors and cables have the proper continuity. Make sure all doors; hood, and trunk are closed.

**Note:** *Some vehicles are sensitive to VHF frequencies. STI-CO suggests that you isolate feedline and check for unwanted interference with the ignition switch on.*

**Reflective Power:** A measurement of reflective power using a wattmeter, you can expect up to 4% reflected power. When results are greater than 4%, recheck tuning.

**SWR:** A measurement of SWR (standing wave ratio) will yield better than 1.5:1. If greater than 1.5:1, verify tuning.

#### **SUGGESTED APPLICATIONS:**

- a. Behind sun visor with included mounting kit
- b. Behind "For Sale" sign
- c. Inside tissue box
- d. Under ball cap
- e. Countless other options