

KC4 SHORTWAVE 4-BAND VERTICAL ANTENNA, **40M/20M/15M/10M**

<https://chelegance.com/products/cntou-kc4-shortwave-4-band-vertical-antenna/>



1-1. DESCRIPTION & SPECIFICATION

The KC4 is a 4-band vertical antenna made of aluminum alloy. It covers 40/20/15/10 meters.

Automatic band switching: The KC4 has a single coax cable feed however each band is individually tuned with a low VSWR across the band. Through fine-tuning, the best (rock-bottom) SWR can be achieved on the user's choice of frequency within the band. The band selection is 100% automatic through the single feed, just switch bands on the radio.

Dimensions	14x14x120cm
Weight	7kg
Maximum power handling	1000 watt PEP (CW500W, RTTY300W)
Antenna impedance	50 Ω
VSWR	<1.5:1
Use frequency band	7/14/21/28MHz (40m/20m/15m/10m)
Bandwidth	40m: 150kHz 20m: 450kHz 15m: 800kHz 10m: 1000kHz
Rated wind speed	35 m/s

1-2. PART LIST

Component	Specification (Size)	Image	Quantity
Main support	1.3*0.15*0.01ft		1
Radials & Capacitive Hat	Long: 3.9ft x10 (6 radials + 4 capacitive hats) Short: 1.6ftx2 (capacitive hats)		12
Antenna body NO:1	3.9ft		1
Antenna body NO:2	3.9ft		1
Antenna body NO:3	3.9ft		1

Antenna body NO:4	1.1ft		1
Antenna body NO:5	3.5ft		1
Antenna body NO:6	0.9ft		1
Antenna body NO:7	2.4ft		1
Antenna body NO:8	1 ft		1
Antenna body NO:9	3.9ft		1
Antenna body NO:10	3.9ft		1
Matching box			1

U clamp			2
Tools bag			1

1-3. INSTALLATION GUIDE

A. Fix the main support with a U-shaped holding clamp and a fixing plate.

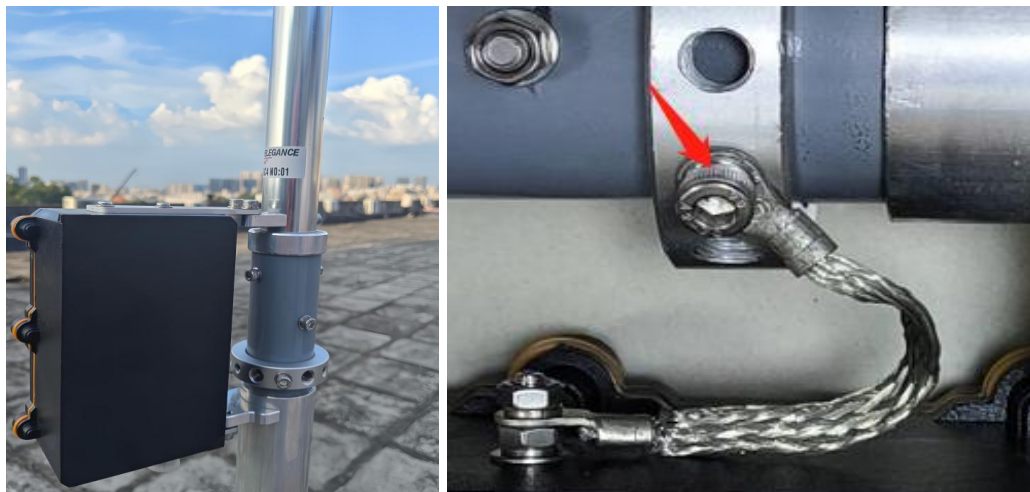


B. Align the raised section of the NO.1 antenna body with the raised section of the main support, then insert the antenna fully.

Ensure the matching box is positioned on the same side as the connection holes.



C. Attach the matching box to the antenna body, insert the screws, and tighten them securely with a spanner. (Red arrow: note that it is screwed to the main support)



D. Insert the remaining antenna bodies in sequence.

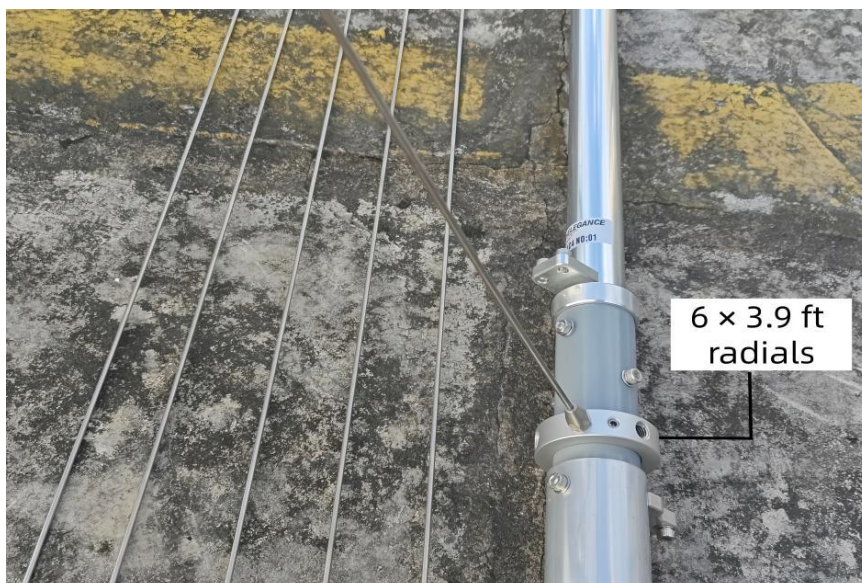
- For the antenna bodies with labels (**NO.2, NO.3, NO.9, NO.10**):
Insert each section into the previous one until the bottom edge of the label aligns with the joint, then tighten the hose clamp.
- For all other antenna bodies:
Insert fully until the section is completely seated, then tighten the hose clamp.

(Refer to the **red-marked** photos for recommended insertion depth of NO.2, NO.3, NO.9, and NO.10.)

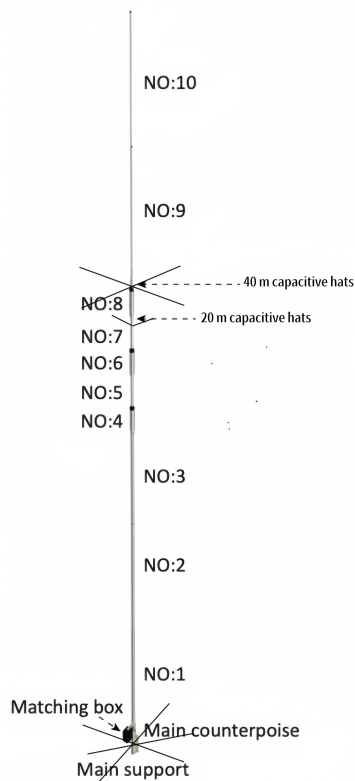
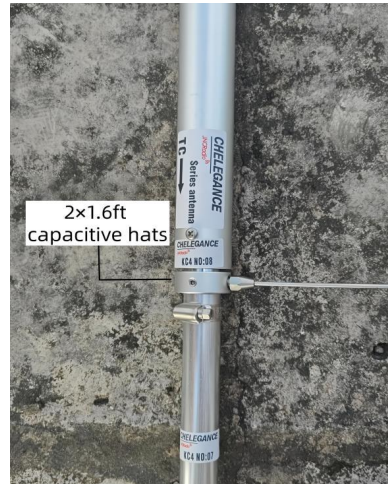
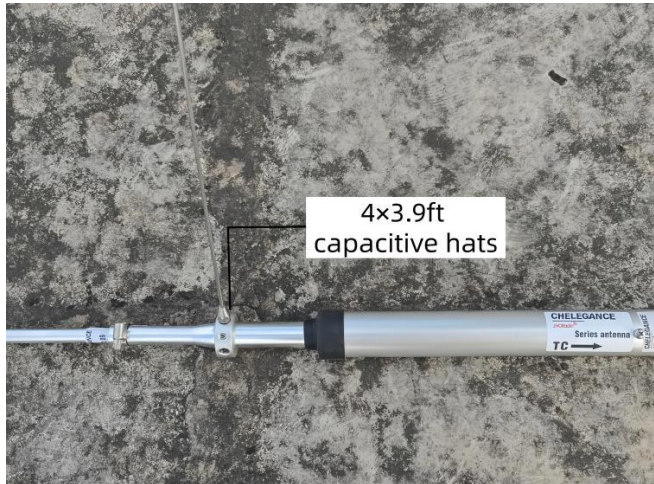


E. Install the Radials & Capacitive Hat(12pcs in total)

- **Six long radials** should be installed on the main support, where you can find the corresponding mounting holes.



- **4pcs*40 m capacitive hats & 2pcs*20 m capacitive hats**
 - NO.7 and NO.8 antenna bodies are pre-assembled.
 - The **NO.8** body has four holes on the top and two holes at the bottom:
 - ◆ Top four holes → for 40 m capacitive hats (3.9 ft)
 - ◆ Bottom two holes → for 20 m capacitive hats (1.6 ft)



F. Finish



1-4. COMMISSIONING STEP

A. Band Segments and Adjustment Tubes

Band	Adjustment Tube(s)	Description
10 m	No.1 – No.3	Adjust the lengths of Tube No.1 to No.3 to tune the 10m band resonance.
15 m	No.5	Adjust the sliding distance of Tube No.5 to tune the 15m band.
20 m	No.7	Adjust the sliding distance of Tube No.7 to tune the 20m band.
40 m	No.10	Shorten or extend Tube No.10 to tune the 40m band.

B. Tuning Principles

- High band adjustments affect lower bands
Example: Adjusting 10m, 15m, or 20m may cause changes in 40m.
- Low band adjustments do NOT affect higher bands
- ★ Recommended tuning order: 10m → 15m → 20m → 40m

C. Special Cases– 20m Band

1) Resonant Frequency Too Low

- ① Shorten Tube No.7 gradually.
- ② If already fully shortened and still too low:
 - **Trim the 20m capacitance hat** slightly.
 - **Cut small amounts**, recheck after each cut.

2) Resonant Frequency Too High

- ① Ensure tuning height is **around 1.5 m**.
- ② Extend Tube No.7 gradually.
- ③ If still too high:
 - Add 50–100 mm of wire to each short radial to lower the frequency.

***Note:**

1. The 'reference lengths point' of some antenna bodies refers to the area near the fixed label position. The center frequency used by the user may vary due to different setup environments and heights. Users can make fine adjustments with the help of an antenna analyzer or VNA to achieve the desired frequency range.
2. The recommended installation height is 1.5 meters, which corresponds to the height used during our performance tests near the label position.
3. The actual wind resistance level depends on the method and the firmness of the installation (mainly depends on the fixed object). And please pay attention to lightning protection

Reach out to us if you have any problems: support@chelegance.com

HAVE FUN WITH KC4, 73!