

7-10MHz BAND HIGH POWER TYPE PORTABLE ROD DIPOLE ANTENNA DP7RH

DIAMOND
ANTENNA

DPC14H (OPTIONAL COIL FOR DP7RH 14/18MHz BAND)

DPC21H (OPTIONAL COIL FOR DP7RH 21/24/28/29MHz BAND)

Operation Instructions

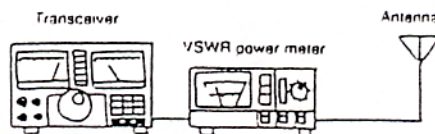
To use this antenna and the optional coils (DPC14H/DPC21H) properly, read this instructions thoroughly before using the antenna. Keep this manual carefully at hand for later use.

Description

1. The DP7RH is a compact, lightweight Rod Dipole antenna. It is able to carry out in a bag.
2. As Rod antenna, it is easy to adjust with expansion and contraction element.
3. It is possible to use the antenna 2m away from the earth due to V type element.
4. Enjoy using the optional coils DPC14H (14-18MHz), DPC21H (21-29MHz).
5. It is possible to use as wire dipole(1.7-40MHz) with a wire element (sell separately) removing a rod element.

Adjustment

1. Prepare a VSWR power meter for applicable frequencies and RF power, and set the meter as shown in the following figure. Practice test transmission for the adjustment as short time and least RF power as possible. (Maximum power rating in constant wave (CW) mode is approximately 1/3 of one in SSB mode.)



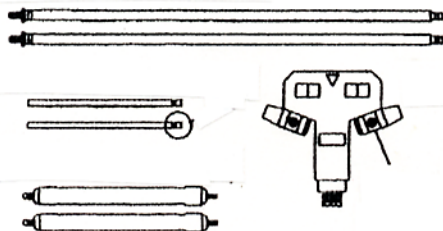
2. Start adjustment from the highest operating frequency downward by cutting adjustment element, both sides in same length, to desired resonant frequency, least VSWR return at the frequency. Since cutting the element in excess may skip desired frequency and result in losing resonant frequency, cut the element little by little.

** If VSWR cannot be better

If VSWR can not be lowered even though resonant frequency came to be desired frequency by cutting the element, it is most likely that the antenna is being effected by earth or near by buildings. Then, it is advised to change antenna height or antenna location. Bending the element downward from the balun can also change VSWR.

Part name (number)

BULUN	1
LOADING COIL	2
ROD ELEMENT A (595mm)	2
ROD ELEMENT B (1000mm)	2
ELEMENT HOLDER	2
(with M5 X12, SPRING WASHER, WASHER)	



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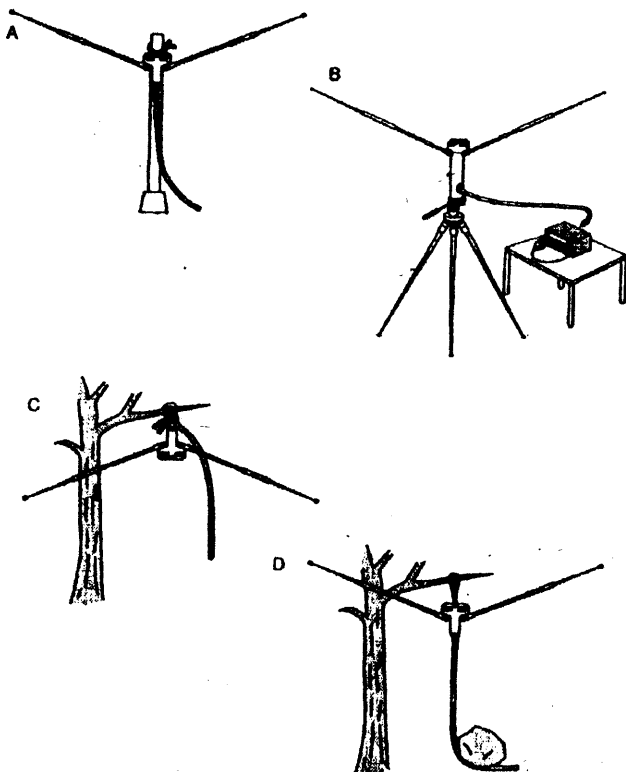
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INSTALLATION

There are various ways of installing the antenna depending on the place where it is installed. In any case, take the following points into account.

1. Since maximum voltage occurs at both ends of the antenna in transmission, touching these points may lead to electric shock. And it is recommended to locate both ends of the antenna at least 1 to 2m away from a building wall to avoid spark noise which may cause TVI.
2. If the antenna is installed the way it is shown in FIG. C or D, to avoid having direct load from coaxial cable, turn a coaxial cable around the balun once and fix with a plastic tape. Set coaxial cable away from the element to avoid causing bad VSWR or unstable VSWR.
3. If the antenna is installed between two trees, to avoid breaking the element by strong wind, it is recommended to put elastic material such as rubber band or coil spring at the both ends of the element.
4. Since antenna adjustment has to be practiced at the place where the antenna is being operated, it is useful to make the antenna up and down easily. It is also useful to get rid of earth effect if the antenna is installed as a horizontal dipole antenna, for the height of the antenna is related with propagation impedance of the antenna.



STANDARD ELEMENT LENGTH

DP7RH

Frequency	Element
7MHz	545mm
10MHz	133mm

DPC14H

Frequency	Element
14MHz	447mm
18MHz	188mm

DP21H

Frequency	Element
21MHz	530mm
24MHz	310mm
28MHz	185mm
29MHz	165mm

ADJUSTMENT ELEMENT CUTTING CHART

The following chart shows resonant frequency change per 1cm element cut.

MODEL	FREQUENCY	VALUE
DP7RH	7MHz	40KHz
	10MHz	140KHz
DPC14H *	14MHz	100KHz
	18MHz	240KHz
DPC21H *	21MHz	120KHz
	24MHz	220KHz
	28MHz	370KHz
	29MHz	370KHz

* Optional coil

Above values may change depending on surrounding environment.

VSWR

Freq.	Band Width	Freq.	Band Width
7MHz	18KHz	21MHz	120MHz
10MHz	16KHz	24MHz	130KHz
14MHz	55KHz	28MHz	140KHz
18MHz	45KHz	29MHz	140KHz

VSWR: Less than 1.5

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Specifications

Model	DP7RH	DPC14H *	DPC21H *
Frequency	7-10MHz	14-18MHz	21-29MHz
Impedance	50Ω		
VSWR	Less than 1.5		
Max Power	120W SSB		
Length	About 3.67m	About 3.5m	
Weight	About 0.65Kgs	About 0.55Kgs	
Type	Portable Rod Dipole Antenna		

* Optional coil

FOR YOUR SAFETY

Read the following safety precautions before starting assembling the antenna.

- Assemble the antenna on the ground or wide and flat place such as on balcony before installation.
- Do not assemble or install the antenna on a place where you can not have enough distance from any electric power lines.
- Do not attempt to install the antenna only by yourself. Installing the antenna alone on the roof may lead you dangerous accident. Always ask your friends for help installing the antenna.
- Do not use iron or aluminum ladder at a reachable distance from any electric power lines.
- Do not install the antenna on a mast which is not grounded properly.
- Do not have your family members or friends touch or come close to the antenna, unless they have realized its potential danger.

TO AVOID FATAL ACCIDENT

- Do not attempt to sustain the antenna, or any part of support structure if it begins to fall down. Let it fall by itself.
- Do not attempt to remove or restore the antenna or any part of support structure if it touches a electric power line by chance. Let it be as it is, do not touch it, and call your local electric power company immediately.

IN CASE OF AN ACCIDENT

- Do not touch a person or an animal who is or seems to be in contact with the antenna or any support structure which is fallen on a live electric power line. Touching one may lead you to be electrocuted.
- Do not attempt to separate a person or an animal who is or seems to be in contact with the antenna or any support structure which is fallen on a live electric power line by yourself. Call or have someone call a police officer, ambulance, doctor immediately.

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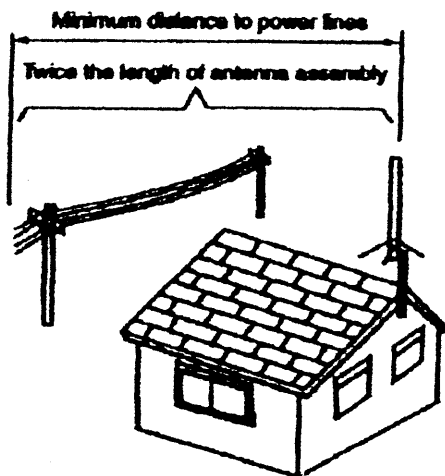
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ANTENNA INSTALLATION PRECAUTIONS

To determine antenna installation location, there are several factors to be taken into account. First thing is antenna propagation direction to specific target stations. As to whether there is any obstacles such as tall buildings on the line of sight. Next is specific installation location. As to whether specific location is adequate in terms of antenna support and surrounding safety.



- Do not attempt to install the antenna by yourself if you do not have any experience in installing base station antenna. Ask your experienced friends or professional for help.
- Do not attempt to install the antenna at a location where does not have enough distance from nearby electric power lines. It is advised to install the antenna at least twice of total antenna height from nearby electric power lines.
- Do not install the antenna on any type of tower pole or telescopic mast which exceeds 30 feet high, if you do not have enough experience in installing the antenna on that kind of location. Ask your experienced friends or professional for help.
- Do not use more than 1/10 section if you install the antenna on iron plumber's pipe. Attach guy wire if multiple pipes are used to install the antenna.

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