Technician Question Pool
July 2018 to June 2022

The MORE Project

http://n2re.org/m-o-r-e-project

Antennas & Feed Lines
No-Nonsense pages 33 - 35

Antenna Types and Polarization

The half-wave dipole antenna measures close to one half wavelength from end to end. The quarter-wave vertical antenna is mounted perpendicular to the earth. Beam antennas focus power in a particular direction. Rubber duck antennas are used with HTs and use inductive loading to make them shorter. To tune an antenna, determine its resonant frequency and then make it longer or shorter.

T9A03

Which of the following describes a simple dipole oriented parallel to the Earth's surface?

A. A ground-wave antenna
B. A horizontally polarized antenna
C. A rhombic antenna
D. A vertically polarized antenna

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T9A10

In which direction does a half-wave dipole antenna radiate the strongest signal?

A. Equally in all directions
B. Off the ends of the antenna
C. Broadside to the antenna
D. In the direction of the feed line

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T9A09

What is the approximate length, in inches, of a half-wavelength 6 meter dipole antenna?

A. 6
B. 50
C. 112
D. 236

T9A09

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B. 50
C. 112
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T9A05

How would you change a dipole antenna to make it resonant on a higher frequency?

A. Lengthen it
B. Insert coils in series with radiating wires
C. Shorten it
D. Add capacitive loading to the ends of the radiating wires

T9A05

How would you change a dipole antenna to make it resonant on a higher frequency?

A. Lengthen it
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C. Shorten it
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T9A08

What is the approximate length, in inches, of a quarter-wavelength vertical antenna for 146 MHz?

A. 112
B. 50
C. 19
D. 12

T9A08

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A. 112
B. 50
C. 19
D. 12

T9A02

Which of the following describes a type of antenna loading?

A. Inserting an inductor in the radiating portion of the antenna to make it electrically longer
B. Inserting a resistor in the radiating portion of the antenna to make it resonant
C. Installing a spring in the base of a mobile vertical antenna to make it more flexible
D. Strengthening the radiating elements of a beam antenna to better resist wind damage

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T9A01

What is a beam antenna?

A. An antenna built from aluminum I-beams
B. An omnidirectional antenna invented by Clarence Beam
C. An antenna that concentrates signals in one direction
D. An antenna that reverses the phase of received signals

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T9A06

What type of antennas are the quad, Yagi, and dish?

A. Non-resonant antennas
B. Log periodic antennas
C. Directional antennas
D. Isotropic antennas

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T9A11

What is the gain of an antenna?

A. The additional power that is added to the transmitter power
B. The additional power that is lost in the antenna when transmitting on a higher frequency
C. The increase in signal strength in a specified direction compared to a reference antenna
D. The increase in impedance on receive or transmit compared to a reference antenna

T9A11

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T9A04

What is a disadvantage of the “rubber duck” antenna supplied with most handheld radio transceivers when compared to a full-sized quarter-wave antenna?

A. It does not transmit or receive as effectively
B. It transmits only circularly polarized signals
C. If the rubber end cap is lost, it will unravel very easily
D. All of these choices are correct

T9A04

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T9A07

What is a disadvantage of using a handheld VHF transceiver, with its integral antenna, inside a vehicle?

A. Signals might not propagate well due to the shielding effect of the vehicle
B. It might cause the transceiver to overheat
C. The SWR might decrease, decreasing the signal strength
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T9A07

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T9A12

What is an advantage of using a properly mounted 5/8 wavelength antenna for VHF or UHF mobile service?

A. It has a lower radiation angle and more gain than a 1/4 wavelength antenna
B. It has very high angle radiation for better communicating through a repeater
C. It eliminates distortion caused by reflected signals
D. It has 10 times the power gain of a 1/4 wavelength design

T9A12

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A non-profit initiative by the IEEE and ARDC to increase the numbers of youth (12-18) and non-males in Amateur Radio. Participants earn FCC licenses and receive free 2-way radios.

For MORE information: n2re.org/m-o-r-e-project
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