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# Technician Question Pool

## July 2018 to June 2022

### The MORE Project

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

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# Antennas & Feed Lines

## No-Nonsense pages 36 - 38

### Feed lines and connectors

Feed lines connect radios to antennas. There are many different types of feed lines, including coaxial cable, ladder line, twin lead, and open-wire feed line, but coaxial cable is the most common type.

The smaller the diameter of the coaxial cable, the higher the losses will be at higher frequencies. Also, the longer the feed line, the higher the losses.



# T9B03

Why is coaxial cable the most common feed line selected for amateur radio antenna systems?

- A. It is easy to use and requires few special installation considerations
- B. It has less loss than any other type of feed line
- C. It can handle more power than any other type of feed line
- D. It is less expensive than any other type of feed line



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# T5C12

What is impedance?

- A. A measure of the opposition to AC current flow in a circuit
- B. The inverse of resistance
- C. The Q or Quality Factor of a component
- D. The power handling capability of a component



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# T5C13

What is a unit of impedance?

- A. Volts
- B. Amperes
- C. Coulombs
- D. Ohms



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# T9B02

What is the impedance of most coaxial cables used in amateur radio installations?

- A. 8 ohms
- B. 50 ohms
- C. 600 ohms
- D. 12 ohms



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# T9B05

In general, what happens as the frequency of a signal passing through coaxial cable is increased?

- A. The characteristic impedance decreases
- B. The loss decreases
- C. The characteristic impedance increases
- D. The loss increases



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# T9B10

What is the electrical difference between RG-58 and RG-8 coaxial cable?

- A. There is no significant difference between the two types
- B. RG-58 cable has two shields
- C. RG-8 cable has less loss at a given frequency
- D. RG-58 cable can handle higher power levels



# T9B10

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# T9B11

Which of the following types of feed line has the lowest loss at VHF and UHF?

- A. 50-ohm flexible coax
- B. Multi-conductor unbalanced cable
- C. Air-insulated hard line
- D. 75-ohm flexible coax



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# T7C09

Which of the following is the most common cause for failure of coaxial cables?

- A. Moisture contamination
- B. Gamma rays
- C. The velocity factor exceeds 1.0
- D. Overloading



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Why should the outer jacket of coaxial cable be resistant to ultraviolet light?

- A. Ultraviolet resistant jackets prevent harmonic radiation
- B. Ultraviolet light can increase losses in the cable's jacket
- C. Ultraviolet and RF signals can mix, causing interference
- D. Ultraviolet light can damage the jacket and allow water to enter the cable



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What is a disadvantage of air core coaxial cable when compared to foam or solid dielectric types?

- A. It has more loss per foot
- B. It cannot be used for VHF or UHF antennas
- C. It requires special techniques to prevent water absorption
- D. It cannot be used at below freezing temperatures



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# T9B07

Which of the following is true of PL-259 type coax connectors?

- A. They are preferred for microwave operation
- B. They are watertight
- C. They are commonly used at HF frequencies
- D. They are a bayonet type connector



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# T9B06

Which of the following connectors is most suitable for frequencies above 400 MHz?

- A. A UHF (PL-259/SO-239) connector
- B. A Type N connector
- C. An RS-213 connector
- D. A DB-25 connector



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# T9B08

Why should coax connectors exposed to the weather be sealed against water intrusion?

- A. To prevent an increase in feed line loss
- B. To prevent interference to telephones
- C. To keep the jacket from becoming loose
- D. All of these choices are correct



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# T9B09

What can cause erratic changes in SWR readings?

- A. The transmitter is being modulated
- B. A loose connection in an antenna or a feed line
- C. The transmitter is being over-modulated
- D. Interference from other stations is distorting your signal



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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](http://n2re.org/m-o-r-e-project)  
Dr. Rebecca Mercuri, Grant Administrator, [rtmercuri@ieee.org](mailto:rtmercuri@ieee.org)



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