
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 39 - 41

Standing Wave Ratio and Antenna Measurements

SWR is a measure of how well-matched a feed line is to an antenna. When we say that an antenna is matched to a transmission line, we mean that the impedance of the transmission line is equal to the impedance of the antenna. The higher the SWR, the greater the mismatch. Lower SWR means more power is transferred to the antenna and radiated.



T7C03

What, in general terms, is standing wave ratio (SWR)?

- A. A measure of how well a load is matched to a transmission line
- B. The ratio of high to low impedance in a feed line
- C. The transmitter efficiency ratio
- D. An indication of the quality of your station's ground connection



T7C03

What, in general terms, is standing wave ratio (SWR)?

- A. A measure of how well a load is matched to a transmission line**
- B. The ratio of high to low impedance in a feed line
- C. The transmitter efficiency ratio
- D. An indication of the quality of your station's ground connection



T7C04

What reading on an SWR meter indicates a perfect impedance match between the antenna and the feed line?

- A. 2 to 1
- B. 1 to 3
- C. 1 to 1
- D. 10 to 1



T7C04

What reading on an SWR meter indicates a perfect impedance match between the antenna and the feed line?

- A. 2 to 1
- B. 1 to 3
- C. 1 to 1**
- D. 10 to 1



T7C06

What does an SWR reading of 4:1 indicate?

- A. Loss of -4 dB
- B. Good impedance match
- C. Gain of +4 dB
- D. Impedance mismatch



AFL3 Q3 of 12

T7C06

What does an SWR reading of 4:1 indicate?

- A. Loss of -4 dB
- B. Good impedance match
- C. Gain of +4 dB
- D. Impedance mismatch**



T9B01

Why is it important to have low SWR when using coaxial cable feed line?

- A. To reduce television interference
- B. To reduce signal loss
- C. To prolong antenna life
- D. All of these choices are correct



T9B01

Why is it important to have low SWR when using coaxial cable feed line?

- A. To reduce television interference
- B. To reduce signal loss**
- C. To prolong antenna life
- D. All of these choices are correct



T7C07

What happens to power lost in a feed line?

- A. It increases the SWR
- B. It comes back into your transmitter and could cause damage
- C. It is converted into heat
- D. It can cause distortion of your signal



T7C07

What happens to power lost in a feed line?

- A. It increases the SWR
- B. It comes back into your transmitter and could cause damage
- C. It is converted into heat**
- D. It can cause distortion of your signal



T4A05

What is the proper location for an external SWR meter?

- A. In series with the feed line, between the transmitter and antenna
- B. In series with the station's ground
- C. In parallel with the push-to-talk line and the antenna
- D. In series with the power supply cable, as close as possible to the radio



T4A05

What is the proper location for an external SWR meter?

- A. In series with the feed line, between the transmitter and antenna**
- B. In series with the station's ground
- C. In parallel with the push-to-talk line and the antenna
- D. In series with the power supply cable, as close as possible to the radio



T7C05

Why do most solid-state amateur radio transmitters reduce output power as SWR increases?

- A. To protect the output amplifier transistors
- B. To comply with FCC rules on spectral purity
- C. Because power supplies cannot supply enough current at high SWR
- D. To improve the impedance match to the feed line



T7C05

Why do most solid-state amateur radio transmitters reduce output power as SWR increases?

- A. To protect the output amplifier transistors
- B. To comply with FCC rules on spectral purity
- C. Because power supplies cannot supply enough current at high SWR
- D. To improve the impedance match to the feed line



T7C08

What instrument other than an SWR meter could you use to determine if a feed line and antenna are properly matched?

- A. Voltmeter
- B. Ohmmeter
- C. Iambic pentameter
- D. Directional wattmeter



T7C08

What instrument other than an SWR meter could you use to determine if a feed line and antenna are properly matched?

- A. Voltmeter
- B. Ohmmeter
- C. Iambic pentameter
- D. Directional wattmeter**



T7C02

Which of the following instruments can be used to determine if an antenna is resonant at the desired operating frequency?

- A. A VTVM
- B. An antenna analyzer
- C. A Q meter
- D. A frequency counter



T7C02

Which of the following instruments can be used to determine if an antenna is resonant at the desired operating frequency?

- A. A VTVM
- B. An antenna analyzer**
- C. A Q meter
- D. A frequency counter



T9B04

What is the major function of an antenna tuner (antenna coupler)?

- A. It matches the antenna system impedance to the transceiver's output impedance
- B. It helps a receiver automatically tune in weak stations
- C. It allows an antenna to be used on both transmit and receive
- D. It automatically selects the proper antenna for the frequency band being used



AFL3 Q10 of 12

T9B04

What is the major function of an antenna tuner (antenna coupler)?

- A. It matches the antenna system impedance to the transceiver's output impedance**
- B. It helps a receiver automatically tune in weak stations
- C. It allows an antenna to be used on both transmit and receive
- D. It automatically selects the proper antenna for the frequency band being used



T7C01

What is the primary purpose of a dummy load?

- A. To prevent transmitting signals over the air when making tests
- B. To prevent over-modulation of a transmitter
- C. To improve the efficiency of an antenna
- D. To improve the signal-to-noise ratio of a receiver



AFL3 Q11 of 12

T7C01

What is the primary purpose of a dummy load?

- A. To prevent transmitting signals over the air when making tests**
- B. To prevent over-modulation of a transmitter
- C. To improve the efficiency of an antenna
- D. To improve the signal-to-noise ratio of a receiver



T7C12

What does a dummy load consist of?

- A. A high-gain amplifier and a TR switch
- B. A non-inductive resistor and a heat sink
- C. A low-voltage power supply and a DC relay
- D. A 50 ohm reactance used to terminate a transmission line



AFL3 Q12 of 12

T7C12

What does a dummy load consist of?

- A. A high-gain amplifier and a TR switch
- B. A non-inductive resistor and a heat sink**
- C. A low-voltage power supply and a DC relay
- D. A 50 ohm reactance used to terminate a transmission line





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
Dr. Rebecca Mercuri, Grant Administrator, rtmercuri@ieee.org



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