
Technician Question Pool

July 2022 to June 2026

The MORE Project

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



Antennas & Feed Lines

No-Nonsense pages 58 - 60

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.



T9B12

What is standing wave ratio (SWR)?

- A. A measure of how well a load is matched to a transmission line
- B. The ratio of amplifier power output to input
- C. The transmitter efficiency ratio
- D. An indication of the quality of your station's ground connection



T9B12

What is standing wave ratio (SWR)?

- A. A measure of how well a load is matched to a transmission line**
- B. The ratio of amplifier power output to input
- 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. 50:50
- B. Zero
- C. 1:1
- D. Full Scale



T7C04

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

- A. 50:50
- B. Zero
- C. 1:1**
- D. Full Scale



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 13

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

What is a benefit of low SWR?

- A. Reduced television interference
- B. Reduced signal loss
- C. Less antenna wear
- D. All of these choices are correct



T9B01

What is a benefit of low SWR?

- A. Reduced television interference
- B. Reduced signal loss**
- C. Less antenna wear
- D. All of these choices are correct



T7C07

What happens to power lost in a feed line?

- A. It increases the SWR
- B. It is radiated as harmonics
- C. It is converted into heat
- D. It distorts the signal



AFL3 Q5 of 13

T7C07

What happens to power lost in a feed line?

- A. It increases the SWR
- B. It is radiated as harmonics
- C. It is converted into heat**
- D. It distorts the signal



T7C05

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

- 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 lower the SWR on the transmission line



T7C05

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

- 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 lower the SWR on the transmission line



T4A02

Which of the following should be considered when selecting an accessory SWR meter?

- A. The frequency and power level at which the measurements will be made
- B. The distance that the meter will be located from the antenna
- C. The types of modulation being used at the station
- D. All these choices are correct



T4A02

Which of the following should be considered when selecting an accessory SWR meter?

- A. The frequency and power level at which the measurements will be made**
- B. The distance that the meter will be located from the antenna
- C. The types of modulation being used at the station
- D. All these choices are correct



T7C08

Which instrument can be used to determine SWR?

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



AFL3 Q8 of 13

T7C08

Which instrument can be used to determine SWR?

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



T4A05

Where should an RF power meter be installed?

- A. In the feed line, between the transmitter and antenna
- B. At the power supply output
- C. In parallel with the push-to-talk line and the antenna
- D. In the power supply cable, as close as possible to the radio



T4A05

Where should an RF power meter be installed?

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



T7C02

Which of the following is 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 is 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 Q11 of 13

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



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 mounted on 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 Q13 of 13

T7C12

What does a dummy load consist of?

- A. A high-gain amplifier and a TR switch
- B. A non-inductive resistor mounted on 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