

True / False Antenna Tuners and SWR – k3eui

Mail your answers to k3eui@barry – at – gmail.com

- 1 An antenna is any device that can produce an electro-magnetic wave from oscillating electrons on a conducting surface
- 2 A dipole wire exhibits a pure resistance at its resonant frequency
- 3 A dipole that operates below its resonant frequency exhibits capacitive reactance
- 4 A dipole that operates above its resonant frequency exhibits inductive reactance
- 5 If the SWR on your 50 ohm coax feed line reads 1:1 in your shack then your feed point impedance must be a resistance of 50 ohms with no reactance
- 6 If the SWR on your coax feed line is 2:1 in your shack then the impedance is either 100 ohms or 25 ohms and may consist of a resistance R and a reactance X
- 7 An SWR of 2:1 is just about as good as a 1:1 SWR as long as your radio can deliver full power to the feedline and your feedline is a low-loss type
- 8 An SWR of 2:1 at your antenna means you are reflecting about 10% of your power back towards the transmitter
- 9 An SWR of 3:1 means you are reflecting about 25% of your power back towards the transmitter
- 10 An Antenna Tuner in your shack provides a conjugate match to your feed line to allow the transmitter to see a 50 ohm load and deliver full power
- 11 An Antenna Tuner in your shack tuned for a 1:1 SWR does not change the SWR and attenuation loss in your feed line going to the antenna
- 12 An antenna tuner in your shack provides a reflection GAIN which offsets the reflection loss at the antenna, increasing your forward power
- 13 Your antenna itself need not be resonant to be an efficient radiator; however, the entire antenna system needs to be resonant to work well
- 14 The side of a dipole connected to the shield of the coax is grounded, yet it radiates as well as the side of the dipole connected to the center wire of your coax
- 15 A loss of 3 dB in your coax results in a loss of 50% of your power to heat
- 16 Measuring the SWR in your shack will always look better (lower) than measuring it directly at the antenna due to attenuation of the cable