



## Soldering a Radio Antenna

**Objective** To heat a coaxial antenna assembly to 600 °F within 2 seconds for a soldering application. The goal to improve on an existing procedure with a soldering iron which required 10 to 15 seconds.

**Material** .250" diameter aluminum antenna assembly, aluminum ferrule, solder paste, temperature indicating paint

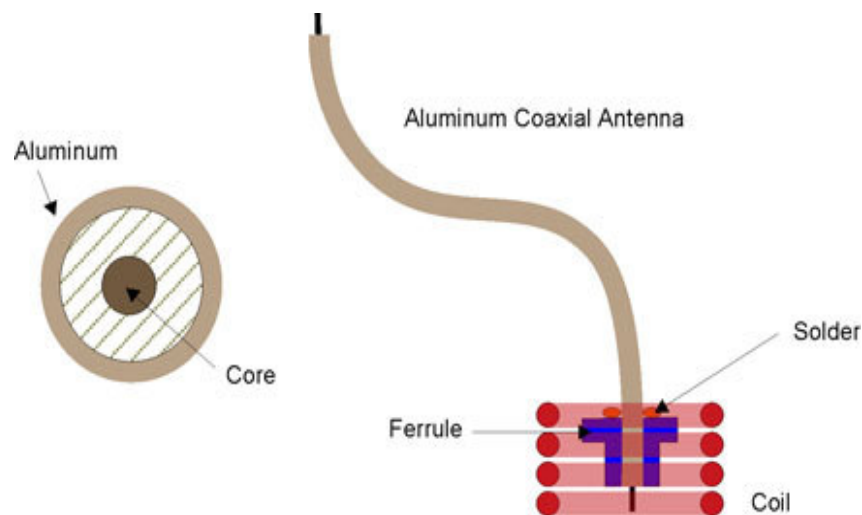
**Temperature** 600 °F

**Frequency** 333 kHz

**Equipment** Ameritherm 1 kW power supply, remote heat station with one 1.2  $\mu$ F capacitor and a specially designed induction coil.

**Process** Initial tests were conducted with temperature indicating paint to establish a heating profile and determine time-to-temperature. The solder paste was then applied to the antenna assembly and aluminum ferrule. RF power was applied for two seconds to heat and flow the solder joint.

**Results** Consistent and repeatable results were achieved within the required two-second time frame. A close examination of the solder joint indicated that the solder flowed well and formed a good, solid joint.



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