Installing DC Block for Radio Frequency Ground On Board a Sailing Vessel

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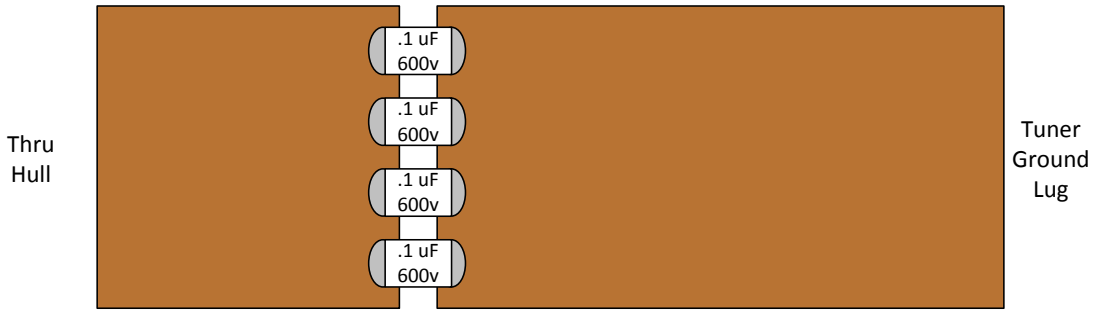

The following information is from Cruiser's Forums User ***transmitterdan***. It was used without his permission as I have no means of contacting him. However, I am sure he will not mind as I have given him due credit. Information on why one would use coupling capacitors or DC block capacitors is readily available on the web for your education. The primary purpose is to prevent galvanic corrosion by mixing AC currents with DC currents.

http://www.cruisersforum.com/forums/f13/the-kiss-ssb-counterpoise-revealed-with-pics-56551-20.html#post1476838

"There is no need for an expensive 7.5kV capacitor in the ground lead.

The voltage on the DC blocking capacitors cannot be several kilovolts. Ground current is less than 100A for sure and most likely less than 20A at the lower frequencies. The reactance of a 0.15uF capacitor at 2MHz is .15*3.14159=.47 ohms. So even on the highest current assumption 100 X 0.47 is 47 volts. If you put just 4 in parallel then the voltage is less than 15 volts. But X7R capacitors are lossy and may overheat if the current is high enough.

A good choice for the capacitor to use is an NPO or C0G ceramic type. Values of 0.1uF are ok and even 0.047 would be acceptable if 8 in parallel. Either leaded or surface mount style will work just fine. If you put 4-8 in parallel then the current will be divided pretty much equally and should work fine. Digi-Key sells 630V surface mount capacitors for less than $2 each in small quantities."

KF6BL Note: Copper tape of a width of 2" (50mm) or more is recommended for the ground strap. No more than 5' (1.5m) from tuner to thru hull. Recommend spraying polyurethane over the copper tape and capacitors to protect against the environment. Do this after operational tests are complete.