Subject: I always do
Posted by Triode_Kingdom on Mon, 16 May 2005 05:20:32 GMT
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>Variable caps were made for radio tuners, and worked with relatively low voltage, high frequency signals.You don't know what you're talking about. Air variables were once the mainstay of high voltage circuitry in both receivers and tube-type transmitters. Many are rated at well over a kilovolt.>They are not used anymore --- good radios use digital tuners instead.Depends on your definition of "good." The lowest possible noise floor is achieved with free-running oscillators (caps/coils or crystals), not with digital synthesizers. Digital tuners are stable because they're locked to a crystal, but other aspects of performance suffer due to the synthesis loop.>The air between plates of tuner capacitors will become ozone and arcing may occur unless voltage remains low. Dust and other particulates can (will) get in between the plates and collect on them.You're just guessing. You think that will happen, but in fact, it's not an issue. I have a variable matching network over 50 years old with air caps that I frequently subject to RF voltages in excess of 3 kV. The caps have never been cleaned or serviced, and they work as well as the day they were made.>These caps were never meant for audio. The market for most air variable caps is high voltage, high frequency. Most audio circuits typically need higher values of capacitance than are practical with an air dielectric. I assure you, no one would use chemical electrolytes or oil if they could achieve the same capacitance in a reasonably-sized air capacitor.>It takes a leap of faith to say they will do anything good for audio, and a lot of gumption to say they have a neutral sonic signature.How much do you actually know about dielectric properties? Do you know that all common dielectrics produce audio frequency distortion and hysteresis except air and vacuum?>No legititmate studies have been doneDielectric properties of insulators such as air, glass, oil, vacuum, and the like have been well defined for decades.>no manufacturers have come forth with a premium audio capacitor using air as a dielectric.For the same reasons no one markets a 100,000 horsepower car - you can't afford it, and it won't fit in your driveway. That doesn't mean it wouldn't be fast. Air capacitors in the values needed for most audio circuitry would be very large and expensive.>I'm skeptical that scavenging old radio tuners is good for audio circuits though.No one has suggested doing that.>universal acceptance of other types of caps for audio such as polys, papers, etc.Of course they're accepted - those dielectrics produce small, affordable components; a convenient, if less than perfect, solution. They're certainly not the equal of air (or direct coupling) though in any fundamental electrical respect.