Folks,

Brian D'Urso has come up with a very nice filter for getting rid of high frequency crud from low-frequency signal lines. It shows >80 dB of attenuation from 3.6 MHz to 600 MHz, >60 dB from 1.3 MHz to 3 GHz, and >40 dB above 320 KHz. Here's how to make one:

Start with a Bud Box, such as CU-123 (Newark 93F689,),. or if you like to build tiny things, a Pomona box type 2400 (Newark 35F3502). Install an RF-tight divider in the box. I use a chunk of aluminum angle bracket securely bolted to the box. Through this divid~r, install a bulkhead capacitor (Newark 90F2268). One side of the capacitor connects to the output BNC connector, and the other side connects to the following components, in series, and in this order:

a 2 1/2 turn ferrite bead (Newark 95F790, Digi-key M2103-ND)
a 1 mH RF choke, JW Miller type 9250-105 (Newark 81F3081, Digi-key M9251-ND) a 3.3 mH RF choke, JW Miller type 9250-335 (Digi-key M9257-ND) the input BNC connector

There appears to be some art to the arrangement of the inductors. Brian thinks that it might be a good thing to make the axes of the two chokes orthogonal, or at least not parallel. So my first choke went from the input BNC connector to the nearest corner, the second choke went along the wall from that corner to the corner of the divider, and the ferrite bead went from that corner to the bulkhead capacitor.

Good

Jim MacArthur
Manager, Harvard Electronic Instrument Design Lab 17A Oxford St.
Cambridge, MA 021~8
617-495-2868
macarthur@physics.harvard.edu