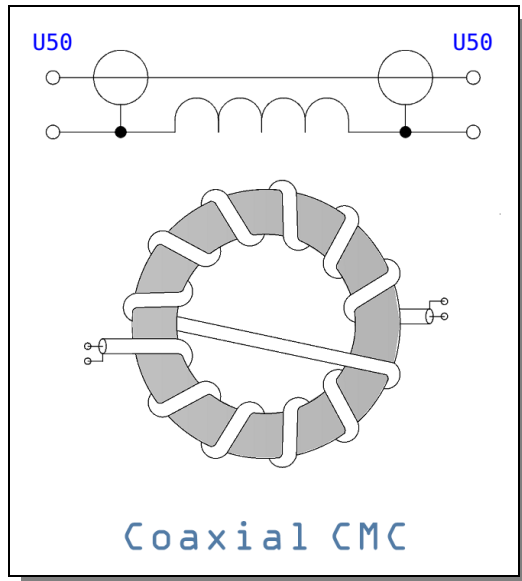


### Coaxial - Toroid Choke for HF - 1 to 30 MHz

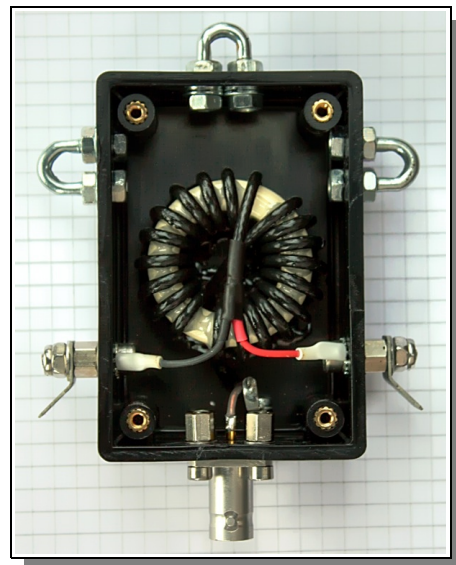


This is a simple coaxial-toroid mantle current choke (or current balun) to use with low-power transmitters and various antennas. Choke works on 1 to 30 MHz frequencies and is able to handle over 100W carrier power, with rather symmetrical loads.

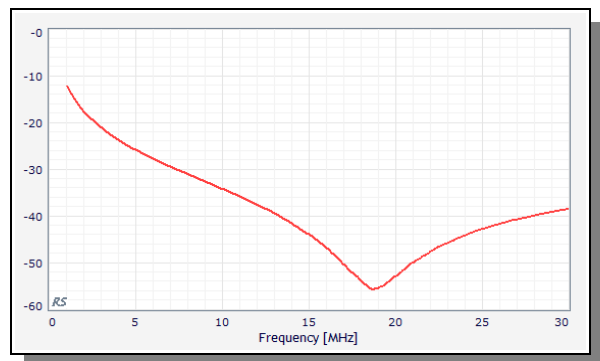
- Toroid      Ferroxcube **TX36/23/15-4C65**.  $A_l=170$  nH,  $\mu = 125$ . Ferrite material similar to FT140-61, try material 31 for lower frequencies.
- Coaxial     Suhner, **RG174/U**, dielectric PE/PVC, 1.5kV  
High quality gable type: Suhner, RG316/U, dielectric PTFE/FEP, 0.8kV
- Winding     Prototype (**9+1+9**) turns. Range (5+1+5) to (9+1+9), select by the target frequency range.
- Inductance   About 61uH. Proto's self-resonance near 18 MHz.
- Impedance    Over 500  $\Omega$  @ 3 to 30 MHz.  
Over 4000  $\Omega$  near self-resonance frequency.



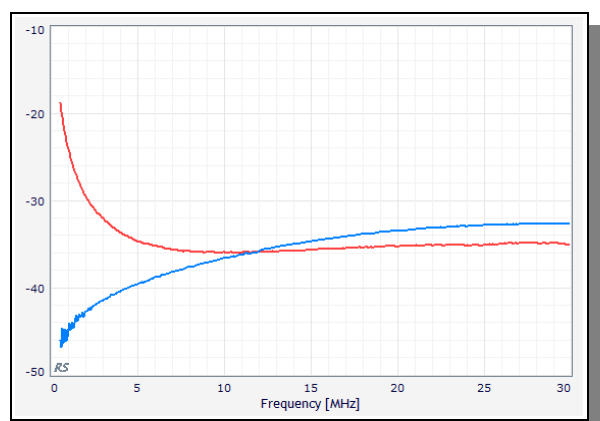
Traditional low-capacitance construction with split winding.



Boxed current balun, for use with dipole antenna.



Relative common mode attenuation, measured with VNA pro analyzer, transmission mode. Data not accurate. Self resonance seen near 18 MHz.



Return loss dB, measured with VNA pro analyzer, reflection mode.

- Blue:** 50 $\Omega$  symmetrical resistive load.  
Max SWR 1,05 at 30 MHz.  
Min SWR 1,003 at 1 MHz.
- Red:** 50 $\Omega$  unsymmetrical resistive load, hot side grounded.  
SWR 1,13 at 1 MHz  
SWR 1,04 at 5 MHz  
SWR 1,03 at 10 MHz  
SWR 1,04 at 30 MHz