

# RF Coil Design Report: 3T Head Coil Element

Generated: 2026-01-09 11:59:12

Target System: 3.0 Tesla MRI

Larmor Frequency: 127.74 MHz

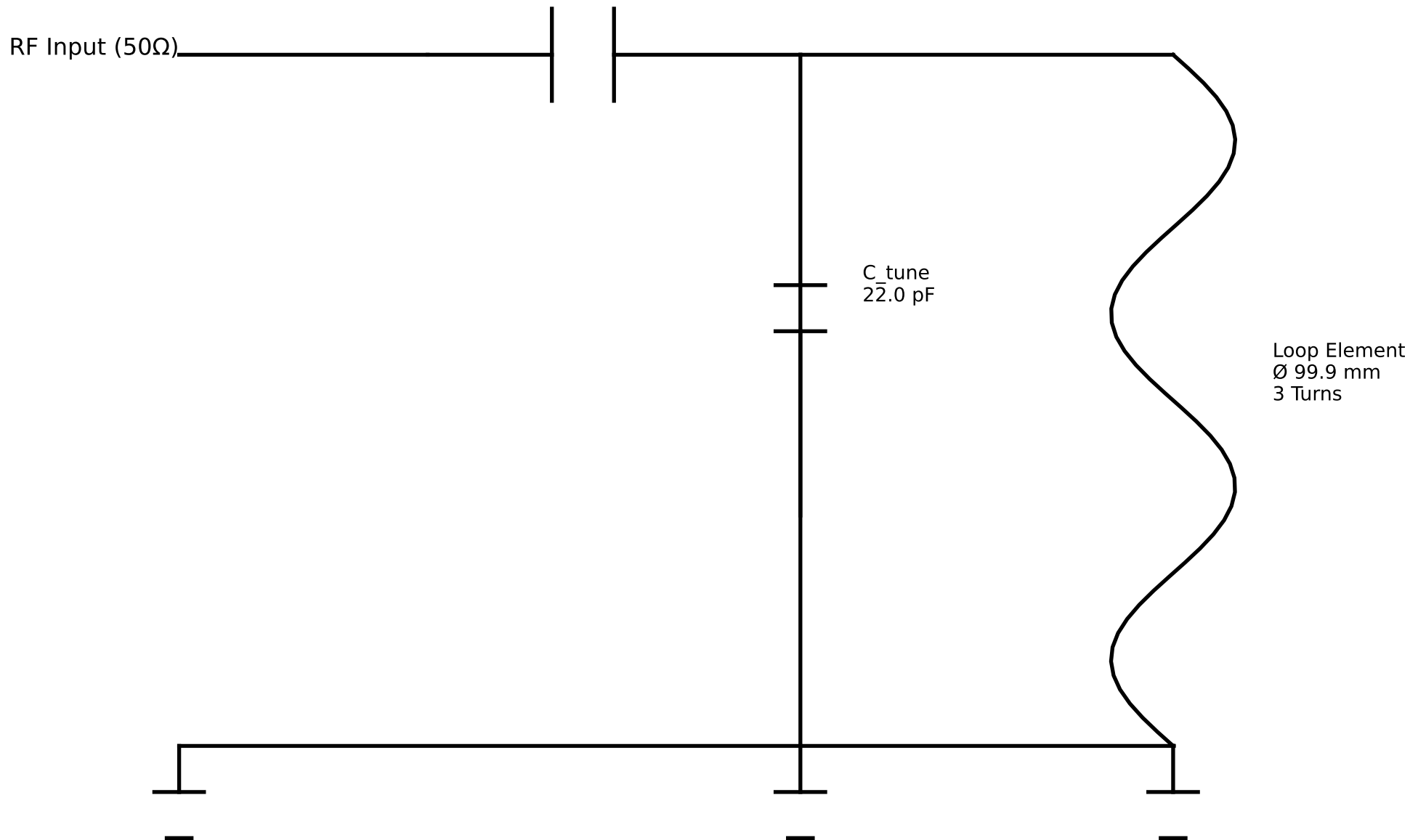
## ELECTRICAL SPECIFICATIONS:

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Topology: Single Loop LC Resonator  
Inductance (L): 70.57 nH  
Capacitance (C): 22.0 pF (Tuning)  
Resonance: 127.74 MHz  
Q-Factor (Est): > 200 (Unloaded)

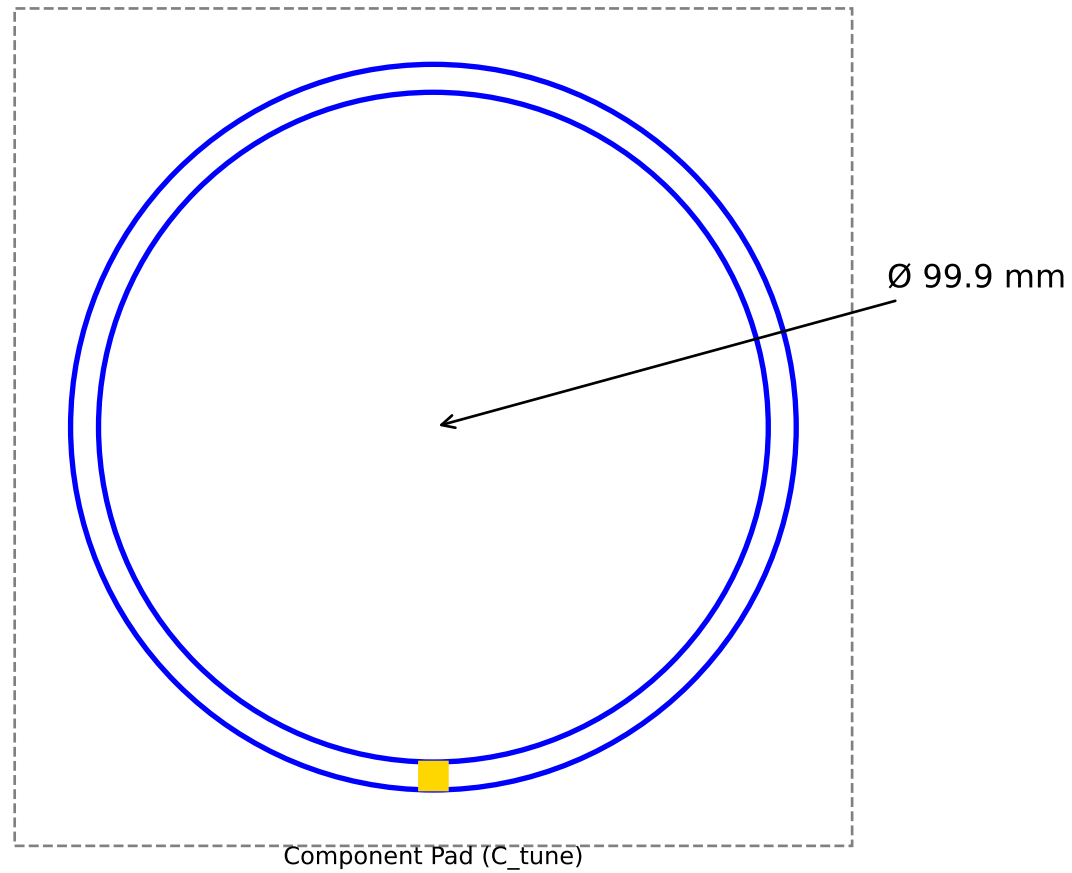
## GEOMETRIC SPECIFICATIONS:

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Diameter: 99.86 mm  
Turns: 3  
Trace Width: 4.0 mm  
Substrate: Pyralux / FR4

Circuit Schematic: 127.74 MHz Tuned Trap

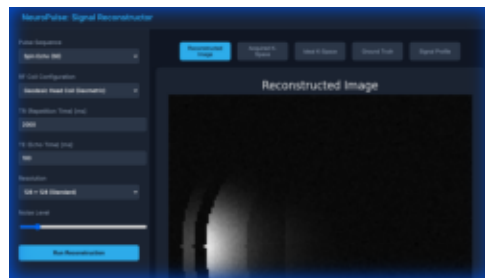


## PCB Fabrication Layout (Top Copper)



# Simulation Verification Data

MRI Reconstruction Output



Solenoid Circuit Verification



Geodesic Circuit Verification

