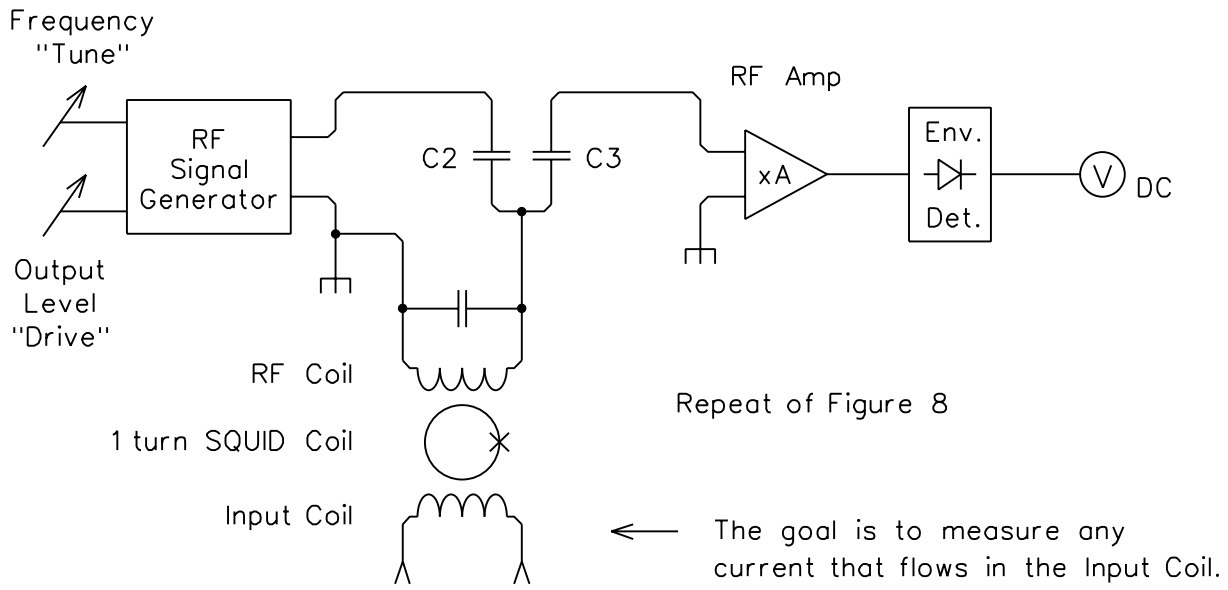
More Details about Figure 8



The Quantum Design Operating Manual tells one to adjust the "Drive" control for maximum signal during the Setup process. I believe this corresponds to an RF current in the 1 turn SQUID Coil that aproaches the critical current of the SIS junction. I believe that this operating point is typically achieved with about 100 uVolts of RF signal across the RF Coil which is actually a parallel resonant LC circuit.

The RF Signal Generator used in the QD 2000 system can be tuned over a range of about 150 to 205 MHz but they prefer that the parallel LC resonant frequency of the RF Coil, i.e. the primary of the SQUID "transformer", be set in the range of 190 MHz to 200 MHz.

200 MHz has a wavelength of about 1.5 meters. In a typical cryogenic probe, the length of the coaxial cable that connects to the RF Coil is about one wavelength so it is fully into the Transmission Line regime. Thus the RF Coil (LC network) and the other circuits connected to this transmission line will need to be properly designed to work in that environment.

From the EE point of view we can ignore all of the interesting Physics of the SQUID and focus on just the fact that when it is operating at the correct RF Frequency and Drive Level then the impedance of the 1 turn SQUID Coil will be a periodic function of the total magnetic flux passing through it.