

Filters Series To Be Announced Soon!

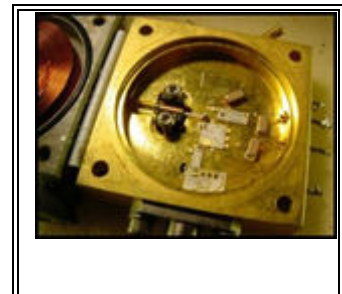
But you will read that by using YIG technology the wide range tunable filters have many many advantages.

Basic YIG Technology Explanations

The key element in our High Q (Quality Factor) circuits is a tiny sphere of YIG (Yttrium Iron Garnet) material. This material has a very high Q resonance providing low loss when it operates at microwave frequencies. YIG material has a unique property - the Q of the resonance improves as the resonant frequency is increased.

To change the resonant frequency, the Sphere is placed in a uniform magnetic field. Varying the strength of this surrounding magnetic field changes the resonant frequency. The High Q YIG sphere is coupled to a transistor oscillator, which provides the output at the desired resonant frequency. This provides a significant performance advantage when compared with other types of tunable circuits where the Q decreases with frequency.

Support electronics are used in these High Q resonant circuits to vary the Magnetic field, and thus control the frequency. These circuits are tunable over octave and multi-octave ranges from 1 GHz to 100 GHz. Typical applications include variable frequency oscillators and wide tunable range filters. When incorporated in frequency synthesizers for use in high data rate microwave radios, YIG oscillators allow octave band (or greater) tunability, frequency step sizes as low as 1 Hz, and phase noise and phase hit performance better than any other competing technology. Recent advances at VPI have virtually eliminated vibration sensitivity and dramatically reduced tuning power requirements. Size, weight, and cost have been reduced to increase the applicability of YIG products to a wider range of new and previously restricted applications.



Early design of YIG oscillator assembly showing basic component parts.