

Synthesized Band Reject Filters: Fast-Tuning Signal Rejection for Wideband ESM and EW Receivers

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Giga-tronics has the industry's most advanced line of tunable, synthesized Band Reject Filters (BRF) for ESM and EW applications. These high-speed, tunable notch filters can quickly block interference from CW and narrowband emissions. Using proprietary driver and PLL technology, these filters offer tuning speeds that are 10X faster than open loop YIG filters designs.

Synthesized BRFs are made possible by combining a YIG tuned oscillator and notch filter within the same magnetic structure. The oscillator is phase locked to a frequency reference by means of conventional indirect synthesis (see Figure 1), thus eliminating magnet hysteresis and frequency errors. By sharing the same magnet as the synthesizer-controlled oscillator, the filter's tuning accuracy is similarly improved.

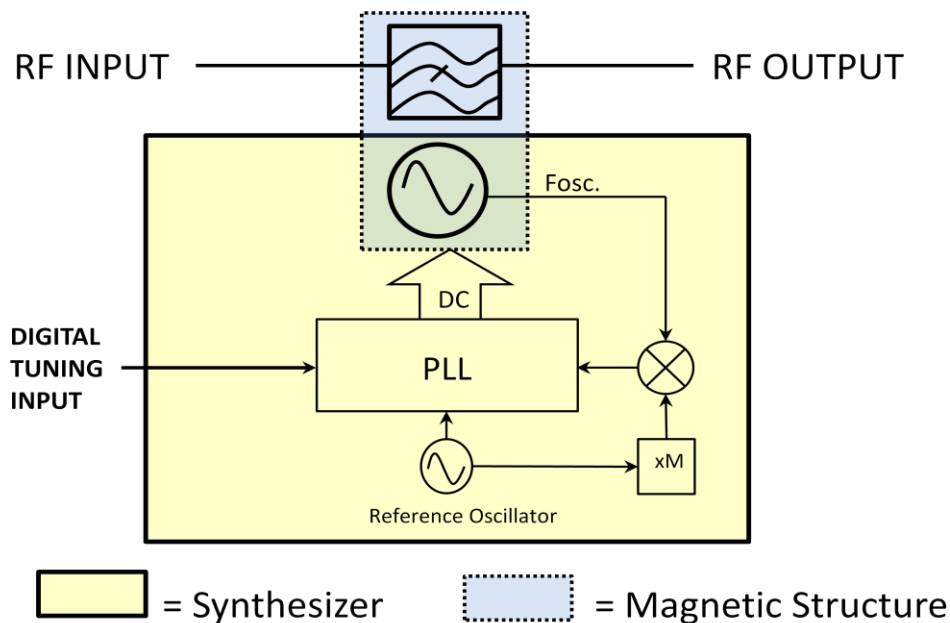


Figure 1. Synthesized Band Reject Filter



Notch depths of greater than 50 dB are available at 10 MHz bandwidth with an accuracy approaching +/- 1 MHz. Wider notch bandwidth models are available for eliminating modulated signals. Insertion loss away from the notch is less than 2dB across the entire tuning range.

An efficient, low DC power consumption design allows operation to 50,000 feet using only convection and radiant cooling.

Giga-tronics has a long history as a proven supplier of digitally-tuned YIG filters for Mil-Aero applications. Its products have been used on numerous airborne platforms. The synthesized BRF designs are fully qualified to Mil-Std for airborne environments.

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CONTACTS:

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