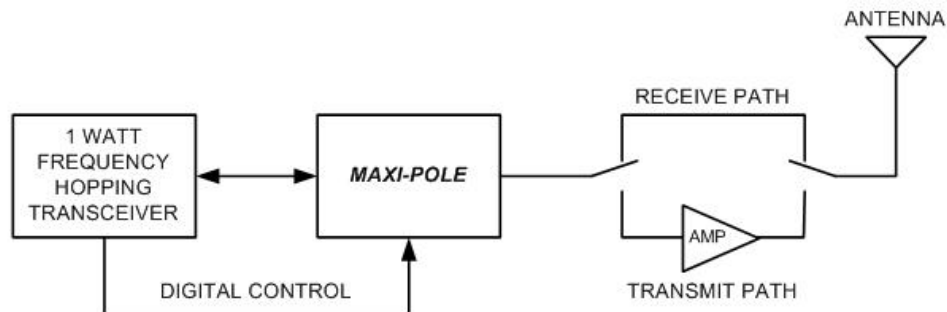


Spurious/Noise Clean-up & Cosite Filtering

Synthesizer, Transmitter Cleanup

An excellent application for MINI-POLE® and MAXI-POLE® filters is cleaning up noise and spurious outputs from transmitters, exciters or synthesizers at up to a 1 Watt power level. Simply placing a filter in line with the RF output and supplying it with a digital frequency word can significantly reduce spurious and noise outputs. The fast (10µs) tuning capability of the filters allows them to track even fast frequency hopping sources. Shown below is a typical spurious/noise cleanup application. A low power (1 Watt) exciter/transmitter is used to generate a clean (S/N > 200 dBc/Hz), high power transmitter output. With a single filter, noise and spurious outputs can be reduced by 60 dB.



Cosite Filtering

Simply bypassing the power amplifier in receive mode allows the same filter to serve as a receiver preselector, isolating the receiver from strong interfering signals incident on the antenna. With a third order intercept point of +40 dBm, the filter protects the receiver front end from overload (desensitization), crossmodulation, intermodulation products, etc.

Combining the receiver preselection and transmitter cleanup applications together results in an easy and cost effective method of increasing the cosite interference tolerance of existing transceivers, especially the frequency hopping variety, while at the same time raising their RF power output.