

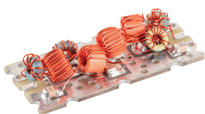
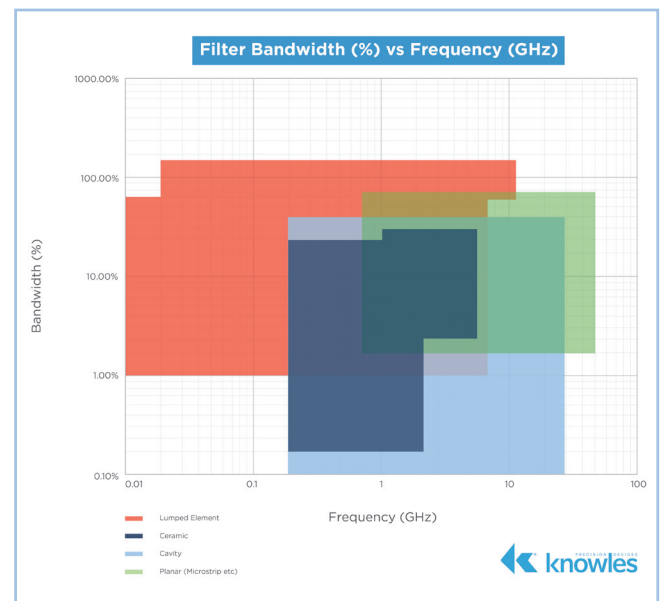


## RF/Microwave Components in Electronic Warfare Applications

The nature of electronic warfare means building systems that can detect, misdirect or attack systems operating across the radio spectrum from HF to V band.

Building high performance receivers and transmitters to address a variety of signals requires RF and Microwave components that are adapted to the portion of the spectrum the system is operating in as well as built to withstand harsh operating environments.

Electronic warfare applications demand high reliability — and at Knowles Precision Devices, we have a long history of providing it. Our filters offer stable performance over a wide frequency range, from DC to 67+ GHz, and are rigorously tested to ensure the highest standards. Plus, our SMD components enable streamlined assembly for easy addition to your manufacturing process.



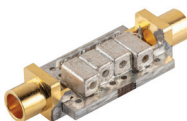
### Lumped Element Filters

- 10MHz - 11GHz center frequencies
- 1% to 175% in fractional bandwidth



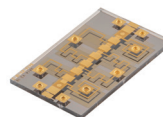
### Cavity Filters and Compact Surface Mount Cavity Filters

- 200MHz to 30GHz for bandwidths in the range of 0.1% to 55%
- Reduced form factor Ceramic Cavity Filters



### Coaxial Ceramic Resonator Filters

- Based on our proprietary ceramics
- 200MHz to 6GHz with bandwidths from 0.2% to 45%.



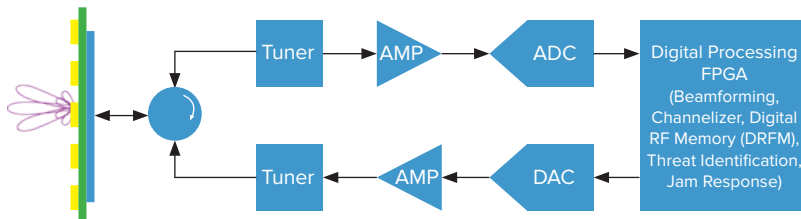
### Microstrip - Thin Film

- Implemented in thin film on high performance temperature stable ceramics
- 1GHz to 42GHz with fractional bandwidths falling between 2% and 80%.



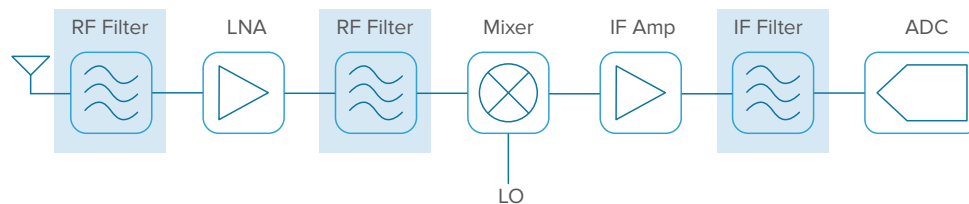
## Filters in Electronic Warfare Applications

Modern EW systems are built to be multi-mission and often share an aperture with other core functions such as Radar and Communications. As a result, they can be extremely broad band in function, with an analog tuner section handling band selection.

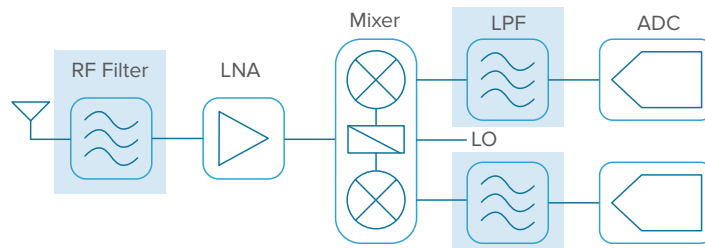


The role of filtering at a given band has changed as systems have evolved from superheterodyne to high IF to RF sampling, but with the central role of tuning enabled by high performance filters.

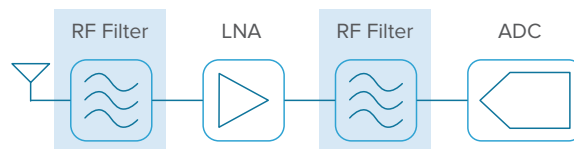
### SINGLE CONVERSION SUPERHET:



### HIGH IF:



### DIRECT SAMPLING:



### KNOWLES FILTER SOLUTIONS:



RF filters have always played a key role in the success of EW systems as they have evolved over the years. At Knowles Precision Devices, we work closely with you to identify the filter solution you need to meet the challenges you face today.

**CONTACT KNOWLES TODAY!**

Visit our website at [knowlescapacitors.com](http://knowlescapacitors.com) to view our Microwave Products Catalog and RF Filters Catalog for more information on this and our other vast product offerings.