

This paper presents compact multilayer interdigital filters for realizing general Chebyshev (i.e., quasi-elliptic) filtering functions. Several coupling elements are proposed for implementing a wide range of couplings between quarter-wavelength resonators, which are placed on a unique layer or stacked thanks to a multilayer technology. Several multipole filters are designed and fabricated using low-temperature co-fired ceramic (LTCC) technology. Designs and experimental results are detailed in order to appreciate the potential of the proposed technology. The multilayer interdigital filters proposed in this paper are designed especially for electronic warfare specifications from S- to Ku-band.