

# Filter Design with Low Complexity Coefficients

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We introduce a heuristic for designing filters that have low complexity coefficients, as measured by the total number of nonzeros digits in the binary or canonic signed digit (CSD) representations of the filter coefficients, while still meeting a set of design specifications, such as limits on frequency response magnitude, phase, and group delay. Numerical examples show that the method is able to attain very low complexity designs with only modest relaxation of the specifications.