Thesis Title	Design of Maximally Flat Group Delay Recursive Digital Filters with Improved Passband Magnitude Response
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ABSTRACT

This thesis deals with the design of linear phase recursive digital filter with flat magnitude response. The thesis presents a design method to improve the frequency response of the filter to have both maximally flat group delay and maximally flat magnitude response , by introducing mirror image polynomial to the numerator polynomial of the recursive filter transfer function. In comparison with the previous design technique, the advantageous of the filter are : the orders of the numerator and denominator polynomial of the filter transfer function can be difference and it provides a controllable passband width magnitude response with maximally flat group delay response.