

ABSTRACT

An Improved FIR Delta Modulation Digital Filter

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A new approach to the implementation of an FIR filter is presented. This approach is based on a modified version of the DMDF proposed in a recent paper by Dr. M. Barton, who stopped short of its implementation. The model is presented in vigorous mathematical form. The new approach yields a non versatile system employing multiplicationless algorithms and facilitates the use of high speed digital computer techniques.

The MicroVAX computer was used to simulate the modified DMDF and conventional FIR filter systems using digital algorithms. The results obtained using the computer show that the modified DMDF will perform with equal performance and fidelity as conventional digital and FIR filter systems. Thus, this project established that the modified DMDF filter is a more attractive cost effective method of performing digital filtering than conventional methods currently used.