



# **Certain Investigation on High Performance Low Complexity Fir Filter Architecture Used In Advanced Multipliers**

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**Abstract:** In mobile communication systems and multimedia applications, need for efficient reconfigurable digital finite impulse response (FIR) filters has been increasing tremendously because of the advantage of less area, low cost, low power and high speed of operation. This project presents a near optimum low- complexity, reconfigurable digital FIR filter architecture based on computation sharing multipliers (CSHM), constant shift method (CSM) and modified binary-based common sub expression elimination (BCSE) method for different word-length filter coefficients. The CSHM identifies common computation steps and reuses them for different multiplications. The proposed reconfigurable FIR filter architecture reduces the adders cost and operates at high speed for low-complexity reconfigurable filtering applications such as channelization, channel equalization, matched filtering, pulse shaping, video convolution functions, signal preconditioning, and various other communication applications.

