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(54) **HIGH-RATE DECIMATION FILTER WITH LOW HARDWARE COMPLEXITY**

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(57) **ABSTRACT**

A Finite Impulse Response (FIR) filter that reduces the complexity of the hardware required for a filter with a high decimation factor while achieving similar performance of prior art poly-phase filters of greater complexity. The FIR filter includes a small number of multiply-and-accumulate (MAC) units connected in parallel to each other between an input stream and an output stream. The MAC units are provided with coefficients from a memory. In an example implementation, the memory is addressed by a counter and the output of the memory selected by a multiplexer for suppling the coefficients.