

Reduced Complexity Iterative Solution For I/Q Imbalance Problem in DVB-T2 Systems

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Abstract : The mismatch between in-phase and quadrature signals in Orthogonal frequency division multiplexing (OFDM) systems, such as DVB-T2, results in a severe degradation in performance. Several general solutions have been proposed in the past, but these are largely computationally intensive, leading to complex implementations. In this paper, we propose a relatively simple iterative solution, which provides good results in relatively few iterations, using fixed precision arithmetic. An additional advantage is that complex digital blocks, such as dividers and square root, are not required. Thus, the proposed solution may be implemented in relatively simple hardware.

Keywords : OFDM, DVB-T2, I/Q imbalance, I/Q mismatch, iterative method, fixed point, reduced complexity

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