

Matched Filter Bank Implementation on FPGA for a Mutually Orthogonal Set of ZCZ Codes Using Hadamard and ZCZ Codes

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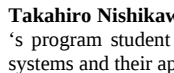
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Abstract— In this paper, we propose a new structure for the compact matched filter bank of a mutually orthogonal set of zerocorrelation zone (ZCZ) codes obtained by Hadamard and ZCZ codes which reduces the number of operation elements such as two-input adders and delay elements. The matched filter banks are implemented on a field programmable gate array (FPGA) with 57; 120 logic elements (LEs). A proposed matched filter bank of the sequence of length 128 can be constructed by the circuit scale of about 14 % compared with conventional matched filter bank.

Keyword— Hadamard code, zero-correlation zone (ZCZ) code, mutually orthogonal set, matched filter bank, field programmable gate array (FPGA)



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