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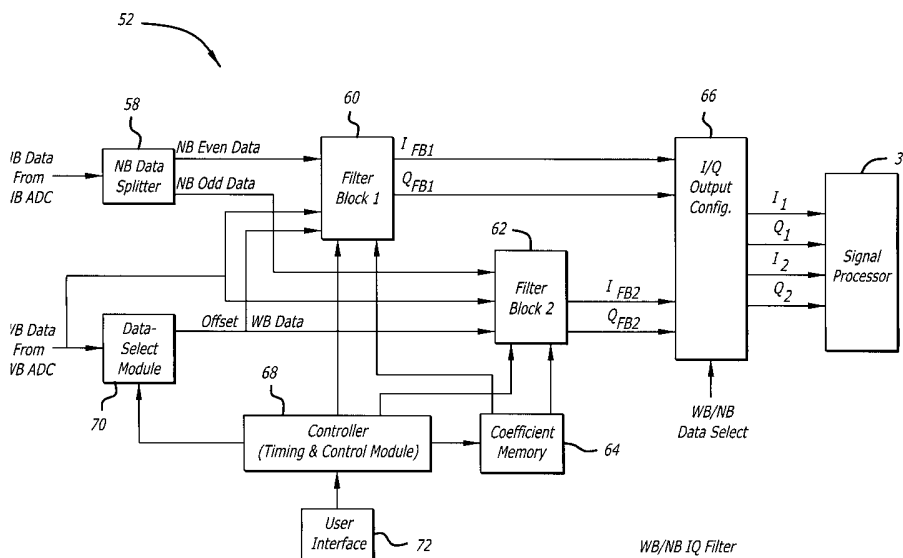
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[Continued on next page]

(54) Title: CONFIGURABLE FILTER AND RECEIVER INCORPORATING SAME



(57) Abstract: An efficient configurable signal filter (52). The filter (52) includes a first mechanism for receiving a first signal of a first type and a second signal of a second type. A second mechanism (60,62) selectively filters the first signal during a first mode of operation and filters the second signal during a second mode of operation. A third mechanism (68) generates control signals. A fourth mechanism (64,68) automatically configures the second mechanism (60,62) to operate in the first mode of operation or the second mode of operation based on the control signals. In a specific embodiment, the first type of signal is characterized by a first rate, and the second type of signal is characterized by second rate. The first signal and the second signal are digital ADC outputs. The second mechanism (60,62) includes plural filter blocks (60,62), each having one or more Multiply-Accumulate (MAC) blocks. Each of the one or more MAC blocks include one or more MAC pipes that are each associated with a coefficient memory data structure of a coefficient memory (64). The third mechanism (68) or a user selects coefficients from each memory data structure to apply to each MAC block, thereby selectively affecting filter response. The control signals direct multiplexers or switches to configure the MAC pipes in a serial configuration or a parallel configuration corresponding to the first mode of operation or the second mode of operation, respectively.



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# INTERNATIONAL SEARCH REPORT

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**A. CLASSIFICATION OF SUBJECT MATTER**  
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**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
H03H H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 859 878 A (PHILLIPS ET AL) 12 January 1999 (1999-01-12) column 8, line 59 - column 10, line 54; figure 3A	1-11
X	EP 1 071 216 A (RAYTHEON COMPANY) 24 January 2001 (2001-01-24) cited in the application paragraphs [0012], [0013], [0017] - [0023]; figures	1-4
X	US 6 256 358 B1 (WHIKEHART J. WILLIAM ET AL) 3 July 2001 (2001-07-03) column 1, line 58 - column 2, line 12 column 5, line 16 - line 50 figures 4,5	1,2

Further documents are listed in the continuation of Box C.

See patent family annex.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

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