

Title (en)

INTERCONNECTED ARRAY OF LOGIC CELLS RECONFIGURABLE WITH INTERSECTING INTERCONNECTION TOPOLOGY

Title (de)

MIT SICH ÜBERSCHNEIDENDER VERBINDUNGSTOPOLOGIE NEUKONFIGURIERBARE VERBUNDENE ANORDNUNG AUS LOGIKZELLEN

Title (fr)

MATRICE INTERCONNECTEE DE CELLULES LOGIQUES RECONFIGURABLES AVEC UNE TOPOLOGIE D'INTERCONNEXION CROISEE

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Application

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Abstract (en)

[origin: WO2011080452A1] The invention relates to an interconnected array of reconfigurable logic cells that carry out at least one logic function (F) and are externally linked to a peripheral connection system (5) that is provided with switch boxes (6) and is connected to programmable input/output blocks. According to the invention, the logic cells [i, j] are distributed in a first dimension in rows i, with $i = 1$ to d, and in a second dimension with columns j, with $j = 1$ to w, where $d = 2$ and $w = 2$ or $d = 2$ and $w = 2$. Each logic cell comprises a first input (E1), a second input (E2), a first output (S1), and a second output (S2). The first input (E1) of each logic cell and the first output (S1) of each logic cell are connected to the connection system (5), and the second input (E2) and the second output (S2) of each logic cell are connected, to other column and row logic cells that are different except for the first and last rows or columns for $d > 2$ or $w > 2$, respectively, by an interconnection topology that intersects between both columns of the array for $w = 2$ and between both rows of the array for $d = 2$ and moreover consecutively oscillates in one direction and a reverse direction so that the logic depth of the logic functions (F) is between 1 and $2 \times d$ and between 1 and $2 \times w$.

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