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[54] **SCAN CELL FOR WEIGHTED RANDOM PATTERN GENERATION AND METHOD FOR ITS OPERATION**

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[58] **Field of Search** ..... 371/22.3, 27, 15.1, 371/22.1, 22.5, 22.6; 324/73.1, 158 R

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[57] **ABSTRACT**

A scan cell comprises a flip-flop, a mode selector and a weighting network. The mode selector responds to a mode-select signal by selectively applying a circuit data input signal or a scan data input signal to a data input of the flip-flop. The weighting network responds to one logic state of a weight-select signal by applying a circuit data signal substantially identical to a scan data output signal appearing at a scan data output of the flip-flop to a circuit data output. The weighting network responds to another logic state of the weightselect signal by applying a circuit data output signal having a predetermined ratio of occurrences of one logic state to occurrences of another logic state to the circuit data output. The scan cell is used for generating weighted random patterns in scan chains for scan testing digital systems.

15 Claims, 4 Drawing Sheets