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Balasubramanian et al.

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(54) **FREQUENCY DIVISION CLOCK ALIGNMENT USING PATTERN SELECTION**

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See application file for complete search history.

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(57) **ABSTRACT**

Generating a clock signal includes: at a root node of a clock distribution network, receiving a first clock signal generated based on a reference clock signal; at a first leaf node, detecting a reference event associated with the reference clock signal and generating a synchronizing signal; passing the synchronizing signal from the first leaf node to the root node; at the root node, generating a second clock signal from the first clock signal synchronized to the synchronizing signal, and distributing the second clock signal to the leaf nodes. Generating the second clock signal includes selecting a repeating pattern of cycles of the first clock signal including fewer than all of the cycles of the first clock signal, and at least every cycle of the first clock signal that is shifted in time by a propagation delay with respect to a rising edge of the reference clock signal.

16 Claims, 5 Drawing Sheets

