



US010073812B2

(12) **United States Patent**  
**Weldon**

(10) **Patent No.:** **US 10,073,812 B2**  
(45) **Date of Patent:** **Sep. 11, 2018**

(54) **DIGITAL DISCRETE-TIME NON-FOSTER CIRCUITS AND ELEMENTS**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **15/288,104**

(22) Filed: **Oct. 7, 2016**

(65) **Prior Publication Data**

US 2017/0041010 A1 Feb. 9, 2017

**Related U.S. Application Data**

(63) Continuation of application No. PCT/US2015/027789, filed on Apr. 27, 2015. (Continued)

(51) **Int. Cl.**  
**H03M 1/06** (2006.01)  
**G06F 17/10** (2006.01)  
(Continued)

(52) **U.S. Cl.**  
CPC ..... **G06F 17/10** (2013.01); **H03M 1/12** (2013.01); **H03M 1/66** (2013.01)

(58) **Field of Classification Search**  
CPC ..... H03M 3/454; H03M 3/43; H03M 3/458; H03M 3/30; H03M 3/436; H03M 1/12; (Continued)

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(57) **ABSTRACT**

A method to implement circuits and circuit elements having one or more ports may include digitizing, using analog-to-digital converters, continuous-time input signals received from one or more ports of a circuit to form discrete-time input signals. At a digital signal processor, the discrete-time input signals are received and the discrete-time input signals are processed to calculate a desired discrete-time output signals. Using digital-to-analog converters, the calculated desired discrete-time output signal are calculated to form outputs of continuous-time output signals at the one or more ports of the circuit. The continuous-time output signals are output to the same one or more ports that receive the continuous-time input signals; and producing, thereby, a desired relationship between the continuous-time output signals and the continuous-time input signals at the one or more ports.

**20 Claims, 19 Drawing Sheets**

