

A Fractional-N Synthesizer with Two Control Words

Abstract

A fractional-N frequency synthesizer has a modulus controller with multiple inputs
5 that control an initial output frequency of the frequency synthesizer, an increment
of variation of tuning of the frequency synthesizer, and a difference between two
adjacent output frequency settings. The fractional frequency synthesizer
includes a modulus controller, which controls the modulus factor for a multiple
modulus frequency divider. The modulus controller has a modulus selection
10 circuit that provides a modulus control signal to the modulus divider to select the
modulus factor of the modulus divider as a function of a sum of one input factor
and a product of a second input and the gain factor. Control signal is an overflow
from a continuous summation of the second digital data word and a product of
the first digital data word and the gain factor digital data word repetitively with
15 itself.

Fig. No. 2