

Abstract

Electronic circuit for timer applications having minimal power consumption and methods for calibrating and operating the same

The invention relates to a method for calibrating and a method for operating an externally programmable electronic circuit and to an externally programmable electronic circuit which is set up to execute the aforementioned methods. The externally programmable electronic circuit has a first oscillator (RCO) and at least one second oscillator (NFO), wherein the second frequency ($1/T$) of the second oscillator (NFO) is lower than the frequency ($1/T_0$) of the first oscillator (RCO). After a programmable time (t_p) has lapsed, the circuit outputs an appropriate output signal to prompt the execution of a prescribed action, wherein the programming is effected by modulating a carrier frequency (f_T). For the purpose of calibration, the known carrier frequency (f_T) is used to ascertain the present period duration (T_0) of the first oscillator (RCO) and a ratio (V) which corresponds to the ratio between the period duration (T_0) of the first oscillator (RCO) and the period duration (T) of the second oscillator (NFO). During the operation of the circuit, the time (t_p) is programmed after or during the calibration by modulating the carrier frequency, wherein after termination of the calibration and a start signal the transmitted time (t_p) lapses by virtue of an appropriate fourth period number ($M-1$) for the second oscillator (NFO) and an appropriate third period number (q) for the first oscillator (RCO), which operates no more than intermittently in parallel, being counted off.

(Figure 1)