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of

Sigma-Delta Voltage to Frequency Converter With Phase Modulation Possibility

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**Abstract:** Voltage to frequency converter (VFC) is an oscillator whose frequency is linearly proportional to control voltage. There are two common VFC architectures: the current steering multivibrator and the charge-balance VFC. For higher linearity, the charge-balancing method is preferred. The charge balanced VFC may be made in asynchronous or synchronous (clocked) forms. The synchronous charge balanced VFC or "sigma delta" ( $\Sigma$ - $\Delta$ ) VFC is used when output pulses are synchronized to a clock. The charge balance VFC is more complex, more demanding in its supply voltage and current requirements, and more accurate. It is capable of 16 to 18 bit linearity. In this paper, the New SVFC (NSVFC) is described. This NSVFC works similarly as conventional SVFC but it has a pure tone on output (for constant input voltage). Therefore, it is possible to measure the period of NSVFC output (this does not work for SVFC).

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