

A CONTINUOUS TIME FILTER WITH PROGRAMMABLE BANDWIDTH AND TUNING LOOP

ABSTRACT OF THE DISCLOSURE

A transconductor is provided having a transconductance G_m . This transconductance is then attenuated with a steering circuit (41) to attenuate the overall transconductance of the transconductor and vary the bandwidth. A fixed voltage is then input to the transconductor with the output thereof offset with a programmable current DAC (48). This output is then provided to an error amplifier (46) for developing an error voltage. This error voltage is then input back to the input of the transconductor to adjust the transconductance thereof to minimize this error. The steering circuit (41) is controlled by a voltage DAC (58) to program the attenuation provided thereby. Both the voltage DAC (58) and the current DAC (48) are controlled by a bandwidth control signal to program the bandwidth of the overall transconductor. This is facilitated while compensating for the process and temperature variations of the transconductance of the transconductor. This is also facilitated with a master/slave relationship.

Figure 2