

SUMMARY OF THE INVENTION

A delta-sigma modulator is provided for converting an analog signal to a digital signal and for maintaining a gain linear relation between both signals. The analog-to-digital modulator utilizes oversampling and delta-sigma techniques within a cascaded, plural-order circuit arrangement. A local feedback loop is coupled across the output and input nodes of at least one subsequent order integrator within the first stage and subsequent stage of a cascaded analog-to-digital converter. The local feedback loop monitors the output from the connected integrator/and modulates that output through local feedback to maintain the optimum input levels of the second and subsequent stages. Proper scaling of the subsequent stages ensures that the quantizaion noise generated in the first stage is canceled, and some direct noise leakage from the first stage are not injected into the digital signal produced by a noise cancellation circuit at all.