

(S7) Abstract: An improved sigma-delta modulator is disclosed. The sigma-delta modulator (100) utilizes Micro Electro Mechanical System (MEMS) technology coupled with on-chip LC networks (110,118). MEMS switches are used to switch capacitors and inductors in and out of the network to alter the center frequency and tuning range of the sigma-delta modulator (100), thus eliminating active components in each LC network (110,118). Furthermore, the use of MEMS switches improves the Q of each LC network (110,118) relative to previous on-chip sigma-delta modulator designs. The increased Q of each LC network (110,118) reduces or eliminates the need for active Q-enhancement circuitry and improves the inherent filter shape within the loop of the sigma-delta modulator (100). In addition, the distortion of active components with the loops (146,146', 148, 148') of the sigma-delta modulator (100) also is improved. The addition of a decimator 252 to the chip presents a complete single chip LC sigma-delta analog-to-digital converter 250.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.