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Collana	SECS Design of multi-bit delta-sigma A/D converters
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Nota di contenuto	Architecture Study of Delta-Sigma Converters -- Design Considerations for Multi-Bit ?? Converters -- Implementations -- Conclusions.
Sommario/riassunto	Design of Multi-Bit Delta-Sigma A/D Converters discusses both architecture and circuit design aspects of Delta-Sigma A/D converters, with a special focus on multi-bit implementations. The emphasis is on high-speed high-resolution converters in CMOS for ADSL applications, although the material can also be applied for other specification goals and technologies. Design of Multi-Bit Delta-Sigma A/D Converters starts with a general introduction of the concepts of Delta-Sigma converters. A wide variety of architectures are discussed, ranging from single-loop to cascaded and various multi-bit topologies. These topologies are optimized to obtain stable converters with a high accuracy. A clear overview is provided of the maximum achievable performance of each topology, which allows a designer to select the optimal architecture for a certain specification. Special attention is paid

to multi-bit architectures and possible solutions for the linearity problem of the DA converter in the feedback loop of converters. Several circuit design aspects of multi-bit Delta-Sigma converters are discussed. Various models are provided for a wide range of linear and non-linear circuit imperfections, which can degrade the performance of the converter. These models allow the designer to determine the required specifications for the different building blocks and form the basis of a systematic design procedure. The presented material is combined in a concluding chapter, which illustrates the systematic design procedure for two high-performance converters. Design of Multi-Bit Delta-Sigma A/D Converters provides a clear comparison of architectures and yields insight into the influence of the most important circuit non-idealities. It will allow you to design robust and high-performance Delta-Sigma AD converters in a shorter time. It is essential reading for analog design engineers and researchers in the field of AD converters and it is also suitable as a text for an advanced course on the subject.

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