

# **Fast Digitization and Digital Receiver Technology**

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## **Abstract**

The potentially lucrative wireless market has led to technological advances in mixed signal devices such as high speed, high resolution A/D and D/A converters. This same market has also driven the development of high performance multi-channel digital receiver and digital transmitter Ics. Similarly, advances in semiconductor processes, coupled with the need for reduced time-to-market, has led to the development of large, enhanced performance, in-circuit programmable logic devices. A review of the key characteristics of these mixed-signal, signal processing and programmable logic devices is presented. The application of these devices and technologies to the instrumentation of Accelerators and Storage Rings is discussed and presented by way of examples. Issues relating to the requirements associated with real-time processing, I/O throughput, reconfigurability, reliability, maintainability and packaging requirements are also addressed.