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Title : Inside an High Bandwidth, Real Time Oscilloscope

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The purpose of this presentation is to provide some background on challenges in designing High Bandwidth, Real Time Oscilloscopes: high bandwidth (30GHz and more) with suitable sample rate (80GS/s and more) and appropriate signal fidelity.

Topics include aspects related with the SiGe technology and the design of specialized “monolithic” analog-to-digital converters (ADCs).

High speed signals (and/or serial data) need even more bandwidth. Oscilloscopes follow Moore’s law : double the bandwidth every three years.

The different approaches of the Digital Signal Processing techniques used to go beyond limits imposed by state-of-the-art technology are delineated.

Digital Bandwidth Interleaving (DBI) architecture is introduced : an innovative method to stay ahead of the BW curve.