Full-Spectrum Capture Receivers in Home Gateways: Circuit and Architecture Challenges

by

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Abstract: Full-Spectrum Capture or Direct-Sampling architectures have emerged as a power-efficient solution in systems where channel bonding or aggregation is the path to increased throughput. While the classic notion of a direct-sampling receiver promises the simplicity of a “direct to bits” signal path and leverages efficient digital signal processing, there are many challenges to a practical implementation. This talk will use the example of a DOCSIS home gateway – a system where Full-Spectrum Capture is now the industry norm – to walk through the system-level requirements and how they impact the IC architecture and implementation.

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