

Highly Integrated Microelectronic Devices for Energy Management

Thomas Herndl
Infineon Technologies Austria AG

Abstract: This presentation concentrates on hardware integration issues for a SmartCoDe wireless node, which is supposed to provide functionality for wireless communication and power metering&control of appliances with the aim to enable the application of demand side management and smart metering in private and small commercial buildings and neighbourhoods. In order to address a new and potentially huge market in homes, business- and public buildings and offices these services must come for very little additional costs. Due to the number of hardware modules that need to be installed, one significant cost item of the total system costs (aside of maintenance-, operational- and service costs) are the hardware purchase and installation costs. Nowadays purchasable modules are bulky and expensive. While minimization of installation costs is addressed by providing a wireless communication interface, which even allows for retrofit without structural changes, for a successful future roll-out scenario one must additionally strive for cutting the hardware purchase costs down to an affordable level for everyone. For that reason highly integrated circuits and effective heterogeneous assembly-, packaging- and manufacturing technologies are discussed.