A Modular Impulse Radio Ultra-Wideband Research & Development Platform for IEEE802.15.4a

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In this paper we present a modular ultra-wideband research and development platform for IEEE 802.15.4a. Besides standard conform operation, this platform also allows operation in a large variety of applications as well as easy adaptation to different frequency bands and coding schemes while common testbeds are mostly restricted to one application and frequency band.

In this contribution, we describe the overall design concept as well as the architecture of each module of our platform in detail and compare our system with an UWB Demonstrator System for IEEE 802.15.4a. Furthermore, we show measurement results to validate our design.

Figure 1: The ultra-wideband R&D platform - block diagram