Low Complexity PHY for IEEE 802.15.3e Close Proximity Point-to-Point Communication

Jae Seung Lee and Moon-Sik Lee Electronics and Telecommunications Research Institute (ETRI)

Abstract

This paper introduces the design of the low complexity PHY (OOK PHY) for IEEE 802.15.3e close proximity point-to-point communication. IEEE 802.15.3e is an amendment to IEEE 802.15.3 for a High-Rate Close Proximity (HRCP) system at 60 GHz band and it provides selectable PHY modes. The OOK PHY is one of the PHY modes and is designed for cost effective devices that require low complexity, low power consumption and simple design. It is based on OOK (On-off keying) and provides data rate up to 6.57 Gbps using channel bonding. The OOK PHY provides enough throughput for close proximity wireless applications although its design is simple and it consumes less power.



Fig. 1: Use case examples for IEEE 802.15.3e OOK PHY. Fig. 5: Structure of the OOK PHY preamble [4, 9].