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IEEE Standard for
Local and metropolitan area networks—

Part 15.4: Low-Rate Wireless Personal Area Networks (LR-WPANs)

Amendment 3: Physical Layer (PHY) Specifications for Low-Data-Rate, Wireless, Smart Metering Utility Networks

IEEE Computer Society

Sponsored by the
LAN/MAN Standards Committee

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27 April 2012

IEEE Std 802.15.4g™-2012
(Amendment to
IEEE Std 802.15.4™-2011)

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Approved 29 March 2012

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Abstract: In this amendment to IEEE Std 802.15.4-2011, outdoor low-data-rate, wireless, smart metering utility network requirements are addressed. Alternate PHYs aredefined as well as only those MAC modifications needed to support their implementation.

Keywords: ad hoc network, IEEE 802.15.4, IEEE 802.15.4g, low data rate, low power, LR-WPAN, mobility, PAN, personal area network, radio frequency, RF, short range, smart metering utility networks, SUN, wireless, wireless personal area network, WPAN

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This amendment specifies alternate PHYs in addition to those of IEEE Std 802.15.4-2011. In addition to the new PHYs, the amendment also defines those MAC modifications needed to support their implementation.

The alternate PHYs support principally outdoor, low-data-rate, wireless, smart metering utility network (SUN) applications under multiple regulatory domains. The SUN PHYs are as follows:

— Multi-rate and multi-regional frequency shift keying (MR-FSK) PHY
— Multi-rate and multi-regional orthogonal frequency division multiplexing (MR-OFDM) PHY
— Multi-rate and multi-regional offset quadrature phase-shift keying (MR-O-QPSK) PHY

The SUN PHYs support multiple data rates in bands ranging from 169 MHz to 2450 MHz.

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