Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: Some PHY implementation issues for OOK dimming
Date Submitted: 12 July 2010
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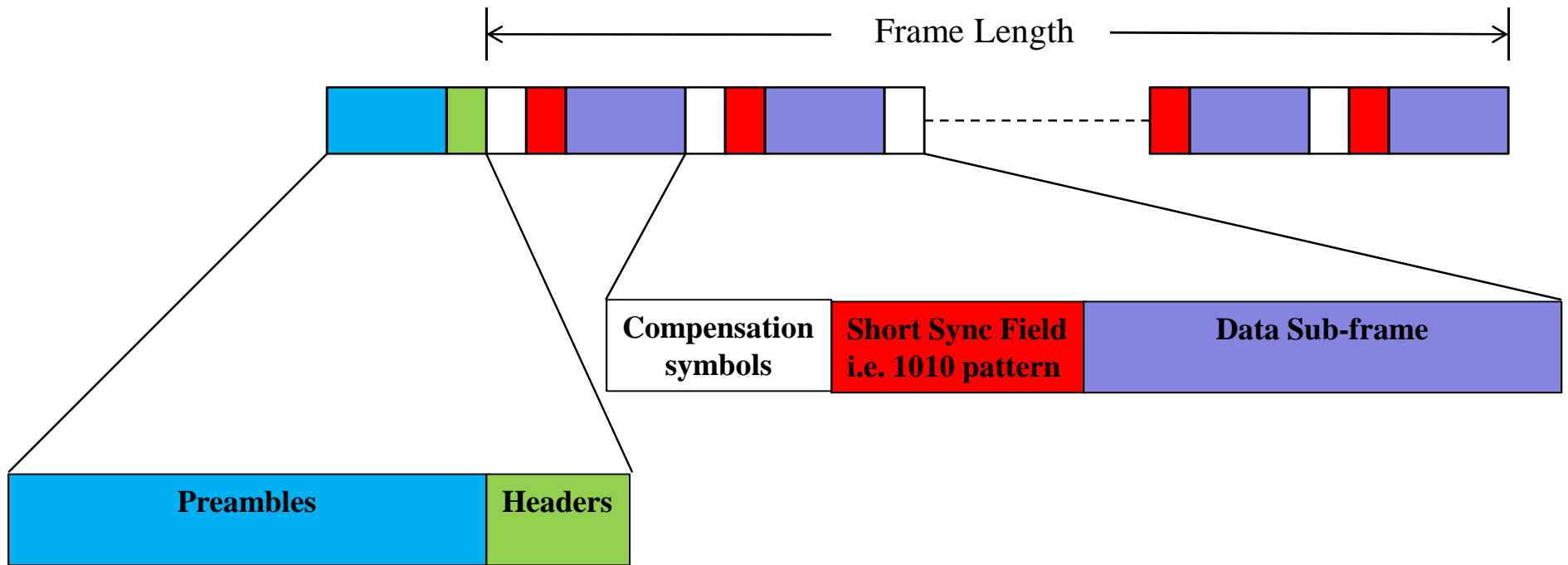
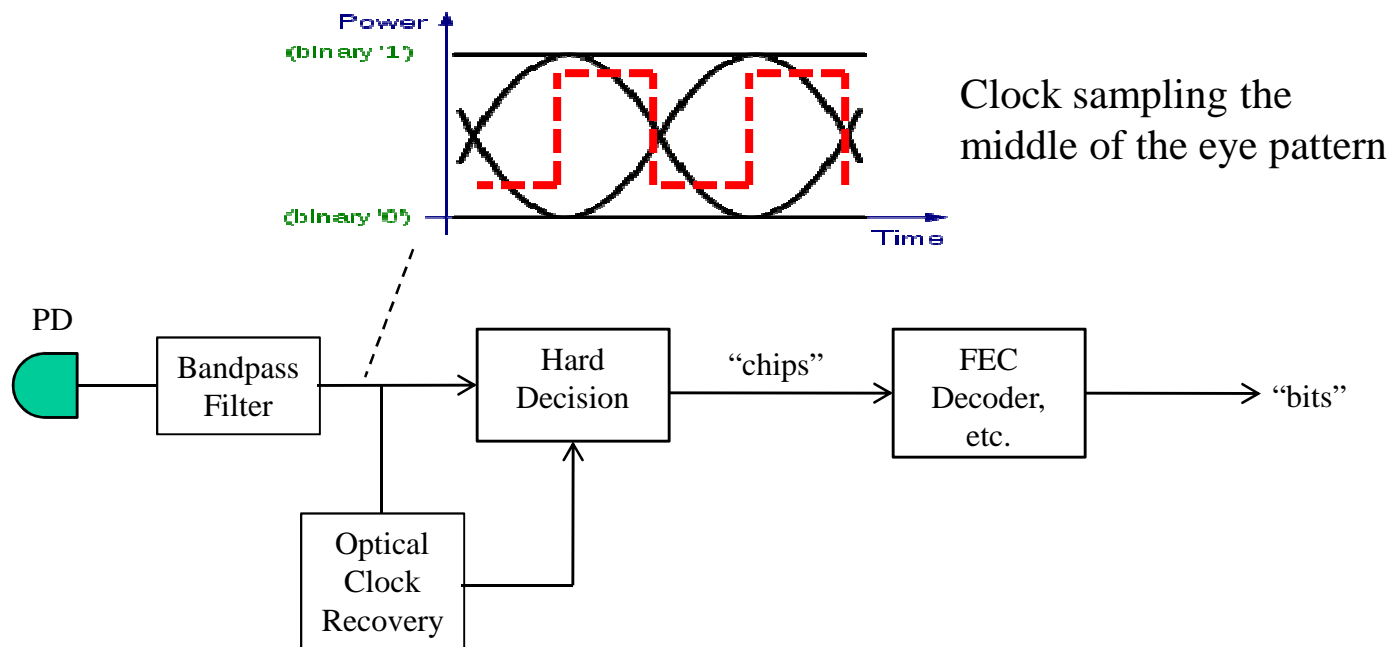**Re:**

Abstract:

Purpose:

An example of a dimming compensated OOK frame from doc 10/159r2.

Frame Length

Compensation symbols | Short Sync Field i.e. 1010 pattern | Data Sub-frame

Preambles | Headers

Hypothetical OOK PHY 1 block diagram

Clock sampling the middle of the eye pattern

Preambles	Headers	Compensation symbols	Short Sync Field i.e. 1010 pattern	Data Sub-frame
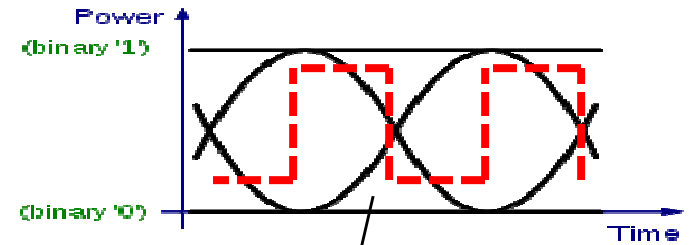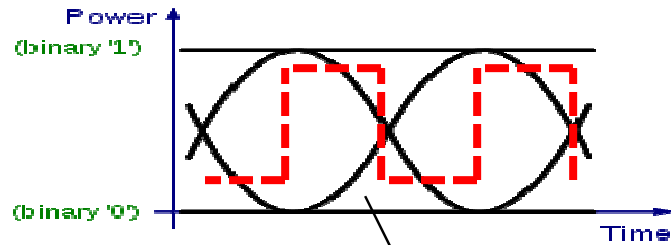
**Blind Sync Process
No knowledge of "start of frame"**
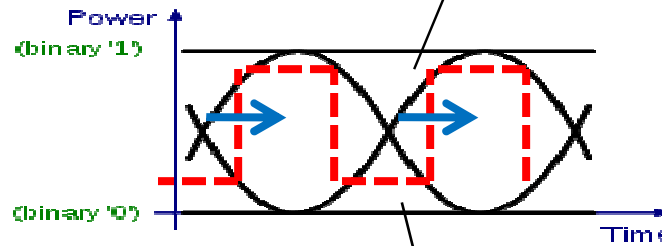
**Smart Sync Process
Has knowledge of "start of sub-frame"**

MAC

What flows between
MAC and PHY?

PHY
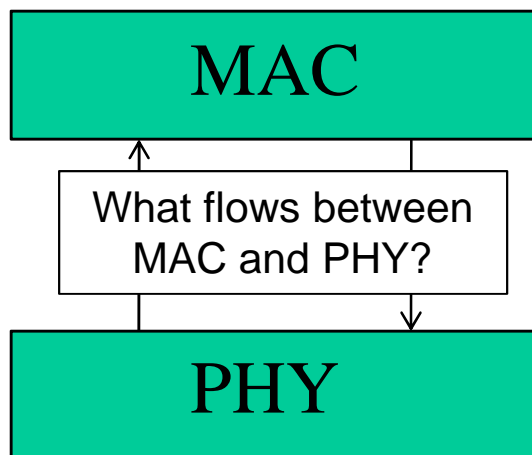
The only task that is PHY specific is the clock recovery (frequency and phase).

For the sub-frame short sync pattern, it is believed that an estimate of the short sync start time is needed. This may require that the PHY buffers the frame in order to provide time for the MAC to process the headers to determine the duration of the compensation time.

Headers

PD

Bandpass
Filter

Buffer

Sub-Frame Payload

Sub-frame timing
(from the MAC?)

Short Sync
Clock
Recovery

Re-aligned Clock