**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **Kookmin PHY constants and PHY PIB attributes** |
| Date Submitted | [September, 2016] |
| Source | Trang Nguyen, and Yeong Min Jang (Kookmin University) |
| Re: |  |
| Abstract | Kookmin PHY constants and attributes are introduced. |
| Purpose | D0 Comments Resolutions and Editorial Revision. |
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# **10.5.1 PHY constants**

**Table 124- PHY constants**

|  |  |  |
| --- | --- | --- |
| **Constant** | **Description** | **Value** |
| aFSKPreamble1 | The first preamble frequency used for OCC modes, including FSK and OOK modulations. | 200Hz |
| aOccDefaultSpatialResolution | The number of LEDs (light sources) at Tx in case of spatial modulation.  The default spatial resolution is applied for S2-PSK, S8-PSK, and HS-PSK. | 2 light sources |
|  |  |  |

# **10.5.2 PHY PIB attributes**

**Table 125- PHY PB attributes (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attribute** | **Identifier** | **Type** | **Range** | **Description** |
| phyOccProposerID |  | integer | 0-7  (3 bits) | This attributes specifies the OCC proposers as shown in table 127. |
| phyOccApplication SpecificMode |  | integer | 0-N | This attributes specifies the application specific PHY modes those belong to an OCC proposer.  E.g. Kookmin OCC Application specific PHY modes are shown in table 126. |
| phyOccOpticalClockRate |  | integer | 5-20 | The optical clock rate is applied for S2-PSK, S8-PSK, and the S2-PSK of HS-PSK modulation.  0: 5 Hz  1: 10 Hz  2: 15 Hz  3: 20 Hz |
| phyOccSymbolRate |  | integer | 5-10 | The symbol rate is applied for FSK, 2D-sequential color code, invisible code modulation:  0: 5 Hz  1: 10 Hz |
| phyOccSubPacketRate |  | integer | 60-120 | The sub-packet rate is applied for OOK modulation, indicating the number of data sub-packets (DS) repeated per second.  0: 60 DS/sec  1: 120 DS/sec |
|  |  |  |  |  |

**Table 127- PHY OCC Proposer ID (A -> Z proposers sorting)**

|  |  |
| --- | --- |
| **PIB Attribute Value** | **OCC Proposer** |
| 0 | Intel |
| 1 | Kookmin |
| 3 | National Taiwan University |
| 2 | Panasonic |
| 4 | SNUST |
| 5-7 | Reserved |

**Table 126- Intel OCC Application Specific PHY modes**

|  |  |  |
| --- | --- | --- |
| **phyOccProposerID** | **PHY Attribute Value** | **Mode Name** |
| 0 | 0 | First UFSOOK mode |
| 0 | 1 | Second UFSOOK mode |
| 0 | … |  |
| 0 | 10 | Twinkle VPPM mode n |
| 0 | 11- N | Reserved |

**Table 126- Kookmin OCC Application Specific PHY modes (continued)**

|  |  |  |
| --- | --- | --- |
| **phyOccProposerID** | **PHY Attribute Value** | **Mode Name** |
| 1 | 0 | S2-PSK |
| 1 | 1 | S8-PSK |
| 1 | 2 | HS-PSK |
| 1 | 3 | 32-FSK |
| 1 | 4 | 64-FSK |
| 1 | 5 | 64-FSK/2-PSK |
| 1 | 6 | OOK mode 1 |
| 1 | 7 | OOK mode 2 |
| 1 | 8 | … |
| 1 | 9 | 2D-sequential color code mode 1 |
| 1 | 10 | 2D-sequential color code mode 2 |
| 1 | 11 | Kookmin Invisible code |
| 1 | 12-16 | Reserved |

**Table 126- NTU OCC Application Specific PHY modes (continued)**

|  |  |  |
| --- | --- | --- |
| **phyOccProposerID** | **PHY Attribute Value** | **Mode Name** |
| 2 | 0 | First RS-FSK mode |
| 2 | 1 | Second RS-FSK mode |
| 2 | 2- M | Reserved |