IEEE P802.11  
Wireless LANs

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| 802.11  [802.11az PHY Spec Text for Subcarrier Mapping in Secure Mode]  (relative to P802.11az/D0.5) | | | | |
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**Abstract**

This submission proposes P802.11az draft amendment text for the P802.11az Negotiation Protocol. The baseline documents that this proposal depends on are:

1. D0.5 of P802.11az
2. D3.0 of PIEEE802.11ax

***TGaz Editor: Modify the subclause 28.3.17c in 11az D0.4.1 (Generation of Secure LTF Symbol):***

**28.3.17c Generation of Secure LTF Symbol**

When the TXVECTOR parameter LTF\_SEQUENCE is present, each sounding symbol of the HEz or VHTz LTF field shall be generated from input bits that is given by TBD. The generation process is shown in Figure 28-aa.



Figure 28-aa Generation of Secure LTF Symbol

The number is 8, 9, 10, and 11 for 20, 40, 80, and 160 MHz transmissions, respectively. A CSD value is given by

(28-rr)

where is 50, 25, 12.5, and 6.25 ns for 20, 40, 80, and 160 MHz transmissions, respectively; the bits for are the first bits of the input bits. A sequence of 8PSK symbols are generated by iterations. In the -th iteration, two sequences and are generated by concatenating two sequences and that ~~are~~ were generated in the (-th iteration as

and (28-ss)

, for (28-tt)

where denotes the concatenation of two sequences and ; denotes the multiplications of a scalar with each element of sequence ; the initial sequences and are given by

(28-uu)

(28-vv)

where is the -th bit of input bits. The phase rotation scalar in Equation (28-tt) is given by 3 consecutive input bits as

, for (28-ww)

where is the -th bit of input bits.

The ~~concatenated~~ sequences and ~~is~~ are mapped to the non-zero subcarriers that are used by the ~~non-OFDMA HE PPDU~~ 2x HE-LTF transmission defined in subclause ~~28.3.9~~28.3.10.10~~.~~, where the subcarrier index is symmetric about 0 and defined for 4x HE-LTF. The secure LTF symbol uses only every other subcarrier in the same way as 2x HE-LTF. The subcarrier mapping is as the following:

— In a 20 MHz transmission, the mapping is given by:

~~TBD~~ and

,

where *A*(*l:m:n*) denotes the vector formed sequentially by the *l*-th, (*l+m*)-th, (*l+*2*m*)-th,…, and *n*-th elements of vector *A*; *l* is the initial index; *m* is the index increment; and *n* is the last index.

— In a 40 MHz transmission, the mapping is given by:

~~TBD~~ and

,

where *A*(*l:m:n*) denotes the vector formed sequentially by the *l*-th, (*l+m*)-th, (*l+*2*m*)-th,…, and *n*-th elements of vector *A*; *l* is the initial index; *m* is the index increment; and *n* is the last index.

— In an 80 MHz transmission, the mapping is given by:

~~TBD~~ and

,

where *A*(*l:m:n*) denotes the vector formed sequentially by the *l*-th, (*l+m*)-th, (*l+*2*m*)-th,…, and *n*-th elements of vector *A*; *l* is the initial index; *m* is the index increment; and *n* is the last index.

— In a 160/80+80 MHz transmission, the mapping is given by:

TBD

After the subcarrier mapping, a linear phase shift for a time-domain cyclic shift is applied to each subcarrier. The phase of the -th subcarrier is rotated by , where is the subcarrier spacing for 2x LTF and is given by Equation (28-rr). After the phase shift, the frequency domain signal is transformed to the time domain. A zero power guard interval is added to the transformed time domain signal as a prefix for each LTF symbol.