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Title	**The uplink subchannelization preamble with lower PAPR**
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Abstract	This contribution proposes an uplink subchannelization preamble having lower value of PAPR.
Purpose	Adoption of the proposed uplink subchannelization preamble into P802.16-REVd/D4-2004
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The uplink subchannelization preamble with lower PAPR

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Background

Subchannelized transmission in the uplink is an option. When the subchannelization is employed, the subchannelization preamble is used. The subchannelization preamble consists of 256 sample sequence preceded by a cyclic prefix. For the uplink transmission, the principal design objective of a preamble is to attain the lowest possible PAPR. We propose a preamble sequence having lower value of PAPR than the

existing one.

The proposed uplink subchannelization preamble

The allocated frequency offset indices of subcarriers are the same as given in the table 186.

P_{SUB} (-100:100) =

{ -1+j,1+j , -1+j , 1-j , -1-j , 1-j ,-1+j ,1+j , -1+j ,-1+j, 1+j ,-1+j ,-1-j ,
-1-j ,-1+j , -1-j , 1+j , 1-j ,1+j , -1-j, -1+j , -1-j , -1-j , -1+j , -1-j ,
1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, -1-j,
1+j, 1-j, 1+j, 1+j, -1-j, -1-j, 1+j, 1-j, 1+j, -1-j, 1+j, 1+j,
-1-j , -1-j , 1+j , 1+j , 1+j , -1-j , -1-j , -1-j , 1+j , -1-j, -1-j , 1+j , -1+j ,
-1+j , -1+j , 1-j , 1-j , 1-j , -1+j , -1+j, -1+j , 1-j , -1+j , -1+j , 1-j ,
1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, 1-j,
-1-j, -1+j, -1-j, -1-j, 1+j, 1+j,-1-j, -1+j, -1-j, 1+j, -1-j, -1-j,
0,
1-j , -1+j , -1+j , 1-j , -1+j , -1+j ,1-j , -1+j , -1+j, -1+j , 1-j , 1-j , 1-j ,
1+j , -1-j , -1-j , 1+j , -1-j , -1-j, 1+j , -1-j , -1-j , -1-j , 1+j , 1+j ,
-1-j, -1-j, 1+j, -1-j, 1-j, -1-j, -1-j, -1-j, 1+j, 1+j, -1+j, 1+j, 1-j,
-1-j, -1+j, -1-j, -1-j, 1+j, 1+j, -1-j, -1+j, -1-j, 1+j, -1-j, -1-j,
1+j , -1+j , 1+j , 1+j , -1+j ,1+j , 1+j , -1+j , 1+j, -1-j , 1-j , -1-j , 1+j ,
1-j , 1+j , 1-j , 1-j , 1+j , 1-j, 1-j , 1+j , 1-j ,-1+j , -1-j , -1+j ,
1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, -1-j,
-1-j, -1+j, -1-j, -1-j, 1+j, 1+j, -1-j, -1+j, -1-j, 1+j, -1-j, -1-j}

Proposed Text Changes

[Change the equation (75) on the page 422 in IEEE P802.16-REVd/D3-2004, as follows]

~~P_{SUB}(-100:100) = {1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, 1+j, 1-j, 1+j, 1+j, -1-j, 1+j, 1+j, 1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, -1-j,
1+j, 1-j, 1+j, 1+j, -1-j, -1-j, 1+j, 1-j, 1+j, -1-j, 1+j, 1+j, 1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j,
1+j, -1-j, -1-j, 1-j, -1-j, 1-j, -1-j, -1+j, -1-j, -1-j, 1+j, 1+j, -1-j, -1+j, -1-j, 1+j, -1-j, -1-j, 1+j,
1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, -1-j,
-1+j, -1-j, 1+j, -1-j, 1+j, 0,1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, 1-j, 1+j,
1-j, 1+j, 1+j, -1-j, -1-j, 1+j, 1-j, 1+j, -1-j, 1+j, 1+j, -1-j, -1-j, 1+j, -1-j, 1-j, -1-j, -1-j, 1-j,
1+j, 1+j, -1+j, 1+j, 1-j, -1-j, -1+j, -1-j, -1-j, 1+j, 1+j, -1-j, -1+j, -1-j, 1+j, -1-j, -1-j, -1-j, -1-j,
1+j, -1-j, 1+j, 1+j, 1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, -1-j, -1-j, 1+j,
-1-j, -1-j, 1+j, 1+j, -1-j, -1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, -1-j, -1-j, -1+j,
-1-j, -1-j, 1+j, 1+j, -1-j, -1+j, -1-j, 1+j, -1-j, 1+j, -1-j, -1-j} (75)~~

P_{SUB} (-100:100) =

{ -1+j,1+j , -1+j , 1-j , -1-j , 1-j ,-1+j ,1+j , -1+j ,-1+j, 1+j ,-1+j ,-1-j ,
-1-j ,-1+j , -1-j , 1+j , 1-j ,1+j , -1-j, -1+j , -1-j , -1-j , -1+j , -1-j ,

1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, -1-j,
1+j, 1-j, 1+j, 1+j, -1-j, -1-j, 1+j, 1-j, 1+j, -1-j, 1+j, 1+j,
-1-j , -1-j , 1+j , 1+j , 1+j , -1-j , -1-j , -1-j , 1+j , -1-j, -1-j , 1+j , -1+j ,
-1+j , -1+j , 1-j , 1-j , 1-j , -1+j , -1+j, -1+j , 1-j , -1+j , -1+j , 1-j ,
1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, 1-j,
-1-j, -1+j, -1-j, -1-j, 1+j, 1+j,-1-j, -1+j, -1-j, 1+j, -1-j, -1-j,
0,
1-j , -1+j , -1+j , 1-j , -1+j , -1+j ,1-j , -1+j , -1+j, -1+j , 1-j , 1-j , 1-j ,
1+j , -1-j , -1-j , 1+j , -1-j , -1-j, 1+j , -1-j , -1-j , -1-j , 1+j , 1+j ,
-1-j, -1-j, 1+j, -1-j, 1-j, -1-j, -1-j, -1-j, 1+j, 1+j, -1+j, 1+j, 1-j,
-1-j, -1+j, -1-j, -1-j, 1+j, 1+j, -1-j, -1-j, -1+j, -1-j, 1+j, -1-j, -1-j,
1+j , -1+j , 1+j , 1+j , -1+j ,1+j , 1+j , -1+j , 1+j, -1-j , 1-j , -1-j , 1+j ,
1-j , 1+j , 1-j , 1-j , 1+j , 1-j, 1-j , 1+j , 1-j ,-1+j , -1-j , -1+j ,
1+j, 1+j, -1-j, 1+j, -1+j, 1+j, 1+j, 1+j, -1-j, -1-j, 1-j, -1-j, -1-j,
-1-j, -1+j, -1-j, -1-j, 1+j, 1+j, -1-j, -1+j, -1-j, 1+j, -1-j, -1-j}