IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Segment Parser | | | | |
| Date: 2020-09-10 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | Email |
| Jianhan Liu | Mediatek |  |  | Jianhan.liu@mediatek.com |
| Shengquan Hu | Mediatek |  |  | Shengquan.hu@mediatek.com |
| Dandan Liang | Huawei |  |  | Dandan.liang@huawei.com |

Abstract:

This document contains draft text of the following motions in [1]:

111(#SP061107, SP#2, SP#3), 115 (SP#70)

**34.3.11.xx Segment Parser**

For a 20MHz, 40MHz, 80MHz, 160MHz, 80+80MHz and 320MHz transmission with a 26, 52, 106, 242, 484, 996 tone RU, and (26+52), (26+106), (242+484) tone MRU, the segment parser is bypassed and the output bits are as specified in Equation (34x1).

(Equation 34-x1)

Where

for a 26, 52, 106, 242, 484, 996tone RU, and (26+52), (26+106), (242+484)tone MRU

For a 160/80+80 MHz and 320/160+160 MHz transmission with a 2×996,(484+996), ((242+484)+996), (484+2x996), (3x996), (484+3x996) and (4x996) tone RU/MRU, the output bits of each stream parser are first divided into blocks of bits The segment parser bit distribution sequence starts from the lowest frequency location to the highest frequency. The parameter of proportional ratio () is defined in Table 34-t1 for each MRU.

**Table 34-t1 Proportional Round Robin Segment Parser Parameters**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MRU** | **RU Order (low to high frequency)** | **Nsd\_total** | **Proportional Ratio *(m0:m1:m2:m3)*** | **leftover bits (on RU996)** |
| **484+996** | 484+996 | 1448 | *1s:2s* | *44\*Nbpscs* |
| 996+484 | 1448 | *2s:1s* | *44\*Nbpscs* |
| **(242+484)+996** | (242+484)+996 | 1682 | *3s:4s* | *44\*Nbpscs* |
| 996+(242+484) | 1682 | *4s:3s* | *44\*Nbpscs* |
| **484+2x996** | 484+996+996 | 2428 | *1s:2s:2s* | *44\*Nbpscs* |
| 996+484+996 | 2428 | *2s:1s:2s* | *44\*Nbpscs* |
| 996+996+484 | 2428 | *2s:2s:1s* | *44\*Nbpscs* |
| **484+3x996** | 484+996+996+996 | 3408 | *1s:2s:2s:2s* | *44\*Nbpscs* |
| 996+484+996+996 | 3408 | *2s:1s:2s:2s* | *44\*Nbpscs* |
| 996+996+484+996 | 3408 | *2s:2s:1s:2s* | *44\*Nbpscs* |
| 996+996+996+484 | 3408 | *2s:2s:2s:1s* | *44\*Nbpscs* |
| **2x996** | 996+996 | 1960 | *1s:1s* | 0 |
| **3x996** | 996+996+996 | 2940 | *1s:1s:1s* | 0 |
| **4x996** | 996+996+996+996 | 3920 | *1s:1s:1s:1s* | 0 |

In the Table 34-t1

Then, each block further performs the proportial round robsin segment parser as shown in Equation (34-x2).

(Equation 34-x2)

where

34-t1

*L-1*

is the number of frequency subblocks. *L=2* for (484+996), ((242+484) +996), 2x996 tone MRU; *L=3* for (484+2x996) and (3x996) tone MRU; *L=4* for (484+3x996) and (4x996) tone MRU

*,*

= 0 for subblock *l*=0, which is equivalent to

For the MRU with the number of the leftover bits in Table 34-t1 is not equal to 0, then proportial round robin parser will continue processing the leftover bits as Equation (34-x3):

(Equation 34-x3)

Where

The illustration of Proportional Round Robin Parser with Leftover Bits Processing is shown in figure 34-f1.



**Figure 34-f1 Illustration of Proportional Round Robin Parser with Leftover Bits Processing**

The illustration of segment parser for (484+996) tone MRU and ((242+484) +996) tone MRU are shown in figure 34-f2 and 34-f3 respectively.



**Figure 34-f2 Illustration of Segment Parser for (484+996) tone MRU**



**Figure 34-f3 Illustration of Segment Parser for ((242+484) +996) tone MRU**

Apended Motions:

802.11be uses 80 MHz segment parser with proportional round robin scheme.

[Motion 111, #SP061107, [9], [28], and [29]]

802.11be uses 80 MHz segment parser with the following parameters for the proportional round robin scheme:

|  |  |  |  |
| --- | --- | --- | --- |
| **RU Aggregation** | **Nsd\_total** | **Proportional Ratio (m1:m2:m3:m4)** | **Leftover bits (per symbol)** |
| 484+996 | 1448 | 1s:2s | 44\*Nbpscs on ru996 |
| 484+2\*996 | 2428 | 1s:2s:2s | 44\*Nbpscs on ru996 |
| 484+3\*996 | 3408 | 1s:2s:2s:2s | 44\*Nbpscs on ru996 |
| 2\*996 | 1960 | 1s:1s | 0 |
| 3\*996 | 2940 | 1s:1s:1s | 0 |
| 4\*996 | 3920 | 1s:1s:1s:1s | 0 |

where

[Motion 111, #SP2, [9] and [30]]

The same proportional round robin is applied to leftover bits

* The same ratios are used in the entire segment parsing process except the ratios of those already filled segment becomes 0.



Leftover bits

To 1st RU

To 2nd RU

*Figure 5 – Proportional round robin parser*

[Motion 111, #SP3, [9] and [30]]

802.11be uses 80 MHz segment parser with the following parameters for (242+484)+996:

|  |  |  |  |
| --- | --- | --- | --- |
| **RU Aggregation** | **Nsd\_total** | **Proportional Ratio (m1:m2:m3:m4)** | **Leftover bits (per symbol)** |
| (242+484)+996 | 1682 | 3s:4s | 44\*Nbpscs on RU996 |

where

[Motion 115, #SP70, [7] and [31]]

**References:**

[1]. 112005664400becompendiumofstrawpollsandpotentialchangestothespecificationframeworkdocument, Edward Au.