IEEE P802.11  
Wireless LANs

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| --- | --- | --- | --- | --- |
| LC channel numbering | | | | |
| Date: 2022-07-14 | | | | |
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|  |  |  |  |  |

Abstract

Comment resolution for TGbb D3.0

# Revision History

R0: initial revision

R1: Based on comments from Allert van Zelst, updated supported channel number range and changed Table E-x column headings.

# Comments

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 4 | Robert Stacey | The channel numbering description could be improved | Technical | 15 | 3.1 | 6 | Insert a column in Table E-1, etc. with heading "LC IF starting frequency (MHz)" after "Channel spacing". For rows with "Applicable to LC" in column "Behaviour limits set" and "5" in column "Channel starting frequency", add "-154". For rows with "Applicable to LC" in column "Behaviour limits set" and "5.950" in column Channel starting frequency", add "181". For other rows add '-'.  Remove the channel number mapping from 32.3.4 since the parameters for Equation 32-1 are now fully defined in Table E-1.  I can provide a more detailed proposal if needed. |

## Discussion

Email from Allert van Zelst:

Hi Robert,

Thanks for your proposal on the TGbb channelization. I can appreciate the direction, but I have a few questions about the details: can you perhaps explain why you let n\_ch now run till 233? I don’t think that maps to the table in 22/1088r3? There, for 5 GHz, the highest channel number is 64, and for 6 GHz it is 29. Is your intend to extend these? For instance, when we look at your table E-4, operating classes 128 – 130, do you want to accept the channels with channel center frequency index up to 171? The LC IF channel center frequency for this would be -154 + 5\*171 = 701 MHz. Similarly for 6 GHz, e.g., operating class 131, the highest channel center frequency index is 233. This would correspond to an LC IF channel center frequency 181 + 5\*233 = 1346 MHz. Is that the intend?

One small comment: in your table E-4, for consistency, I propose to change “LC IF starting frequency (MHz)” to “LC IF channel starting frequency (MHz)”

Thanks,

Allert

# Proposed resolution

REVISED

Agree in principle.

TGbb editor to implement the changes under “Editing instructions” in 22/1589r1.

# Editing instructions

**32.3.4 Channel numbering**

***TGbb editor: Change as follows:***

In systems using light communications, the frequency segment refers to the LC IF signal.

LC IF channel center frequencies are defined at every integer multiple of 5 MHz above the LC IF channel  
starting frequency. The relationship between LC IF channel center frequency and channel number nch is given  
in Equation (32-1)

LC IF channel center frequency = LC IF channel starting frequency + 5 x nch (MHz), (32-1)

where

nch = 1,…, 64 is the channel number (for 20 MHz channel width) or channel center frequency index (for 40 MHz, 80 MHz, 80+80 MHz or 160 MHz channel width)

LC IF channel starting frequency is defined in Annex E

Equation 32-1 and the LC IF channel starting frequencies defined in Annex E divide the LC IF spectrum into two segments: frequencies in the range 16 MHz – 176 MHz that map from the 5 GHz band and frequencies in the range 176 MHz – 336 MHz that map from the 6 GHz band as shown in Figure 32-4 (Channel mapping from 5 GHz and 6 GHz RF to LC IF).

A channel number or channel center frequency index from the 5 GHz band shall not be greater than 64. A channel number or center frequency index from the 6 GHz band shall not be greater than 29.

**TGbb editor: Insert Figure 32-4 from 22/1088r3 here**

NOTE—The 80 MHz LC IF channels specify the maximum bandwidth of one IF frequency segment in the  
80+80 MHz channel configuration.

An LC AP shall communicate the operating class, band (5 GHz or 6 GHz), channel width, and channel  
number

**Annex E**

**E.1 Country information and operating classes**

***TGbb editor: Change Table E-1 as follows: insert a new column “LC IF channel starting frequency” after the column “Channel spacing (MHz)”; Add “-154” to the cells in the new column for rows 1, 2, 22, 23, 27, 28, 128, 129.***

***TGbb editor: Change Table E-2 as follows: insert a new column “LC IF channel starting frequency” after the column “Channel spacing (MHz)”; Add “-154” to the cells in the new column for rows 1, 2, 5, 6, 8, 9, 128, 129, 130.***

***TGbb editor: Change Table E-3 as follows: insert a new column “LC IF channel starting frequency” after the column “Channel spacing (MHz)”; Add “-154” to the cells in the new column for rows 1, 32, 33, 36, 37, 41, 42, 128, 129, 130, 133, 134, 135.***

***TGbb editor: Change Table E-4 as follows:***

[Note there is an editing error in the draft for row 130: “Channel set” is empty and “Channel center frequency index” has the number list]

Table E-4 --- Global operating classes

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Operating class** | **Nonglobal operating class(es)** | **Channel starting frequency (GHz)** | **Channel spacing (MHz)** | **LC IF channel starting frequency (MHz)** | **Channel set** | **Channel center frequency index** | **Behavior limits set** |
| 115 | E-1-1,  E-2-1,  E-3-1,  E-6-1 | 5 | 20 | -154 | 36, 40, 44, 48 | - | UseEirpForVHTTxPowEnv  Applicable to LC |
| 116 | E-1-22,  E-2-5,  E-3-36,  E-6-4 | 5 | 40 | -154 | 36, 44 |  | PrimaryChannelLowerBeha  vior,  UseEirpForVHTTxPowEnv  , Applicable to LC |
| 117 | E-1-27,  E-2-8,  E-3-41 | 5 | 40 | -154 | 40, 48 |  | PrimaryChannelUpperBeha  vior,  UseEirpForVHTTxPowEnv  , Applicable to LC |
| 118 | E-1-2,  E-2-2,  E-3-32,33,  E-6-2 | 5 | 20 | -154 | 52, 56, 60, 64 |  | DFS\_50\_100\_Behavior,  UseEirpForVHTTxPowEnv  , Applicable to LC |
| 128 | E-1-128, E-  2-128, E-3-  128, E-6-  128 | 5 | 80 | -154 |  | 42, 58,  106, 122, 138, 155, 171 | UseEirpForVHTTxPowEnv  , Applicable to LC |
| 129 | E-1-129, E-  2-129, E-3-  129, E-6-  129 | 5 | 160 | -154 |  | 50, 114,  163 | UseEirpForVHTTxPowEnv  , Applicable to LC |
| 130 | E-1-130, E-  2-130, E-3-  130, E-6-  130 | 5 | 80 | -154 |  | 42, 58,  106, 122,  138, 155,  171 | 80+,  UseEirpForVHTTxPowEnv  , Applicable to LC |
| 131 |  | 5.950 | 20 | 181 | 1, 5, 9, 13, 17, 21, 25,  29, 33, 37, 41, 45, 49,  53, 57, 61, 65, 69, 73,  77, 81, 85, 89, 93, 97,  101, 105,  109, 113,  117, 121,  125, 129,  133, 137,  141, 145,  149, 153,  157, 161,  165, 169,  173, 177,  181, 185,  189, 193,  197, 201,  205, 209,  213, 217,  221, 225,  229, 233 | - | Applicable to LC |
| 132 |  | 5.950 | 40 | 181 | - | 3, 11, 19, 27, 35, 43, 51, 59, 67, 75, 83, 91, 99, 107, 115, 123, 131, 139, 147, 155, 163, 171, 179, 187, 195, 203, 211, 219, 227 | Applicable to LC |
| 133 |  | 5.950 | 80 | 181 | - | 7, 23, 39,  55, 71, 87,  103, 119,  135, 151,  167, 183,  199, 215 | Applicable to LC |
| 134 |  | 5.950 | 160 | 181 |  | 15, 47, 79,  111, 143,  175, 207 | Applicable to LC |
| 135 |  | 5.950 | 80 | 181 |  | 7, 23, 39, 55,  71, 87, 103,  119, 135,  151, 167,  183, 199,  215 | 80+  Applicable to LC |
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**References:**