IEEE P802.11
Wireless LANs

|  |
| --- |
| LB188 (D3.0) resolutions for frame sizes |
| Date: 2012-09-06 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Mark RISON | CSR | CB4 0WZ, U.K. | +44 1223 692000 | Mark.RISON@csr.com |
|  |  |  |  |  |

Abstract

This document proposes resolutions for CIDs 6240, 6426, 6427 and 6464 on P802.11ac/D3.0 (LB188), regarding frame sizes.

## Revision History

r0: Initial revision.

r1: Update for the fact that a DMG STA cannot be a mesh STA.

r2: Give a reference from the 2304s back to the normative source. Point out that you also need to fragment max-size MMPDUs if HT Control is used. Make a non-normative statement even more non-normative. Fix the CID transpositions.

r3: Fix the revision number in the Proposed resolution and explicitly label changes to be effected by the editor.

## Comments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6240 | Brian Hart | 8.3.2.1 (42.12) | 0-11424. Is limit even useful given that it's grossly untrue for non-VHT STAs as described in great detail in a Note - without references! | How about "variable" then create something like Table 8-0a that explicitly accounts for security encap and mesh headers |
| 6426 | Mark RISON | 8.3.3.1 (43.15) | Didn't we agree to delete "Otherwise, the maximum management MPDU size is 2356 octets." because it was suspect and unnecessary? | Delete the cited sentence |
| 6427 | Mark RISON | 8.3.3.1 (42.51) | "In an MMPDU carried in one or more PPDU(s), none of which are VHT PPDU(s), the maximum unencrypted MMPDU size is 2304 octets." duplicates information given three lines before | Delete the cited sentence |
| 6464 | Mark RISON | 8.3.3.1 (43.14) | "If a management MPDU is sent using a VHT PPDU, the size of the MPDU is constrained by the maximum MPDU size supported by the recipient. Otherwise, the maximum management MPDU size is 2356 octets." is either duplicate or wrong | Delete the paragraph |

## Discussion

6240: Now that Table 8-13c in 8.2.4.7.1 (née 8-0a in 8.2.3) gives the frame size constraints on a per-type and per-PHY basis, it is true the size limits in the figures and the NOTEs below them have lost most of their value, though the bits on Mesh Control field location and VS cipher encapsulation sizes are worth keeping.

6246/6247/6464: Duplication of information is a bad idea, as the information is likely to diverge with subsequent edits.

## Proposed changes

The changes are relative to D3.1 (not D3.0). The changes are shown using Word change tracking. Select “Final Showing Markup” or “Final” as appropriate. Editorial instructions w.r.t. the baseline, to be given as-is in the draft, are shown using bold italics (as in the current draft). Editorial instructions w.r.t. the latest draft, to be effected by the editor before the next draft, are shown using bold italics and wavy underline. Any Word comments should be ignored when merging the proposed changes in.

**8. Frame formats**

**8.2 MAC frame formats**

**8.2.3 General frame format**

***Change the second paragraph as follows:***

The Frame Body field is of variable size, constrained as defined in 8.2.4.7.1 (General)(#6225)~~. The maximum frame body size is determined by the maximum MSDU size, plus the length of the Mesh Control field (6, 12 or 18 octets) if present, the maximum unenerypted MMPDU size (see Table 8-0a), plus any overhead from security encapsulation.~~

***Replace Figure 8-1 with the following (changing the frame body length range to “variable”):***

***Editor: Change the frame body size in Figure 8-1 to “variable”.***

**8.2.4.7 Frame Body field**

**8.2.4.7.1 General**

***Change as follows:***

The Frame Body is a variable-length field that contains information specific to individual frame types and subtypes. The minimum length of the frame body is 0 octets. The maximum length of the frame body is ~~defined by the maximum length MSDU plus the length of Mesh Control field as defined in 8.2.4.7.3, if present, plus any overhead for encryption as defined in Clause 11, or by the maximum length A-MSDU plus any overhead for encryption as defined in Clause 11.~~constrained or affected by:(#6225)

— the maximum MMPDU, MSDU, A-MSDU and MPDU sizes supported by the recipient(s) for the PPDU format in use, as specified in Table 8-13c (Maximum DU sizes (in octets) and durations (in microseconds) per PPDU format)

— the maximum PPDU duration (e.g.,(#6016) HT\_MF L SIG L\_LENGTH, HT\_GF, VHT or DMG aPPDUMaxTime(#6446) (see Table 8-13c (Maximum DU sizes (in octets) and durations (in microseconds) per PPDU format)); any nonzero(#6773) TXOP Limit; any regulatory constraints (e.g.,(#6016) CS4-msBehavior))

— the fields present in the MAC header (e.g.,(#6016) QoS Control, Address 4, HT Control)

— any security encapsulation (e.g.,(#6016) TKIP/CCMP/GCMP Header and MIC) or Mesh Control fields; see 8.2.4.7.2

NOTE 1—In an A-MSDU, the Mesh Control field is located in the A-MSDU Subframe Header (see Figure 8-33). In an MMPDU, the Mesh Control field is located within the MMPDU (see 8.5.18). Such Mesh Control fields need to be taken into account if a maximum A-MSDU or MMPDU size constraint applies, as well as if a maximum MPDU size constraint applies.

NOTE 2—TKIP is not allowed with A-MSDUs (see 11.1.6) or MMPDUs (see 11.4.4.1), so need not be taken into account if a maximum A-MSDU or MMPDU size constraint applies.

NOTE 3—Vendor-specific cipher suites might have larger security encapsulation sizes than TKIP/CCMP/GCMP. This needs to be taken into account if a maximum MPDU size constraint applies.

***Editor: In Table 8-13c, put a full stop at the end of each NOTE where not already present (and make sure all other NOTEs in the draft have a full stop at the end too).***

**8.3.2 Data frames**

**8.3.2.1 Data frame format**

***Change Figure 8-30 as shown (changing Frame Body field size range to “variable”):***

***Editor: Change the frame body size in Figure 8-30 to “variable”.***

**8.3.2.2 A-MSDU format**

***Change Figure 8-32 as shown (changing MSDU field size range to “variable”):***

***Editor: Copy Figure 8-32 from the baseline and change the MSDU size in the figure to “variable”.***

***Add a NOTE below Figure 8-33:***

NOTE—A DMG STA does not send Mesh Data frames, and all other STAs have a maximum MSDU size of 2304 octets (see Table 8-13c).

**8.3.3 Management frames**

**8.3.3.1 Format of management frames**

***Change the 1st paragraph as follows:***

The format of a management frame is defined in Figure 8-34. The Frame Control, Duration, Address 1, Address 2, Address 3, and Sequence Control fields are present in all management frame subtypes. ~~The~~ In an MMPDU carried in one or more non-VHT PPDUs the maximum MMPDU size~~, excluding the MAC header and FCS, is 2304 octets~~ is specified in Table 8-13c (Maximum DU sizes (in octets) and durations (in microseconds) per PPDU format). In an MMPDU carried in one or more PPDUs, all of which are VHT PPDUs, the maximum MMPDU size is the maximum MPDU size specified in Table 8-13c (Maximum DU sizes (in octets) and durations (in microseconds) per PPDU format) supported by the recipient(s) less the shortest management frame MAC header and FCS.

NOTE—In an MMPDU carried in one or more PPDUs, all of which are VHT PPDUs, an MMPDU of maximum size is fragmented if it is encrypted (i.e. transmitted in robust management frames) or is transmitted with an HT Control field, so that the maximum MPDU size is not exceeded.

***Change Figure 8-34 as follows (Changing the Frame Body field size range and deleting the associated***

***note):***

***Editor: Change the frame body size in Figure 8-34 to “variable”.***

***Editor: Remove the parentheses in “(s)” at 188.22, 188.23. Also fix 163.32 (by saying “this/these” or otherwise).***

**Annex W**

(informative)

**Mesh BSS operation**

**W.1 Clarification of Mesh Data frame format**

***Add a NOTE below Figure W-1:***

NOTE—A DMG STA does not send Mesh Data frames, and all other STAs have a maximum MSDU size of 2304 octets (see Table 8-13c).

## Proposed resolution

6240: REVISED. See Proposed changes in 12/1022r3, which agree in principle with the commenter.

6426/6427/6464: ACCEPTED.