IEEE P802.11
Wireless LANs

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| --- |
| Resolution to CID related to CH\_BANDWIDTH |
| Date: 2018-November-11 |
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Abstract

This submission proposes resolution to CID 3100 & 3111.

The resolutions are in reference to Draft IEEE P802.11ay/D2.1 and IEEE 802.11REVmd\_D1.6.

(Changes from r0 to r1 are:

* Fix type CW\_BANDWIDTH with CH\_BANDWIDTH – marked with a note text
* Add missing “parameter” word when CH\_BANDWIDTH and/or CHANNEL\_AGGREGATION is addressed – marked with a note text

)

(Changes from r1 to r2: merge CID 3111 – marked with a note text, no editorial change done)

|  |  |  |  |
| --- | --- | --- | --- |
| CID | Clause | Comment | Proposed change |
| 3100 |  | In some places CH\_BANDWIDTH takes on value equivalent to a channel bit map, such "010000", while in other case, it takes on a value of CBW216, CBW432, etc. This can be confusing | Add text somewhere says CBW216 is equal to the set of channels bit maps that have one non-zero value. Extend definition to CBW432, CBW648, etc. |
| 3111 |  | Table 43: CH\_BANDWIDTH, CBW216 is missing for case when FORMAT is NON\_EDMG | Add CBW216 before CBW432 |

**Proposed resolution for CID 3100:** Revise.

**Proposed resolution for CID 3111:** Revise

**Discussion:**

The current 11ay Draft 2.1 has several BW signalling:

1. CH\_BANDWIDTH (in TXVECTOR and RXVECTOR)
	1. The text in first paragraphs of 29.2.2 is referring to CH\_BANDWIDTH as a bit vector with bitmap.
	
	2. The text in the table (Table 43) is also stating that CH\_BANDWIDTH is a bitmap
	
	NOTE: the names CBW216, CBW432, CBW648, CBW864, CBW216+216 and CBW432+432 don’t have a defined name.
	Furthermore, there is no table to define the conversion.
	3. There is text that refers to CH\_BANDWIDTH as CBW216, CBW432, etc. E.g.
	
2. BW in EDMG-Header (Table 53)

3. In section 29.4.8, the CH\_BANDWIDTH is referred as CBW216, CBW432, etc.



Resolution:

* Clearly that there is a mixup and clarity issue.
* Suggested to:
	+ Keep CH\_BANDWIDTH as bitmap as defined in TXVECTOR & RXVECTOR
	+ Replace the enumarated names (CBW216, CBW432, CBW648,…) with other simple description using CH\_BANDWIDTH (bitmap) and CHANNEL\_AGGREGATION
	+ Add details to tables 62-64 for clarity.

***TGay Editor: Edit the paragraphs of subclause 3.2 in Draft 2.1 (P20L14)***

**2.16 GHz physical layer (PHY) protocol data unit (PPDU)**: A Clause 29 2.16 GHz enhanced directional multi gigabit (EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW216 and~~ FORMAT equal to EDMG) or a Clause 29 2.16 GHz non-enhanced directional multi gigabit (non-EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW216 and~~ FORMAT equal to NON\_EDMG).

**4.32 GHz physical layer (PHY) protocol data unit (PPDU)**: A Clause 29 4.32 GHz enhanced directional multi gigabit (EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW432 and~~ FORMAT equal to EDMG) or a Clause 29 4.32 GHz non-enhanced directional multi gigabit (non-EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW432 and~~ FORMAT equal to NON\_EDMG).

**2.16+2.16 GHz physical layer (PHY) protocol data unit (PPDU)**: A Clause 29 2.16+2.16 GHz enhanced directional multi gigabit (EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW216+216 and~~ FORMAT equal to EDMG) or a Clause 29 2.16+2.16 GHz non-enhanced directional multi gigabit (non-EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW216+216 and~~ FORMAT equal to NON\_EDMG).

**6.48 GHz physical layer (PHY) protocol data unit (PPDU)**: A Clause 29 6.48 GHz enhanced directional multi gigabit (EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW648 and~~ FORMAT equal to EDMG) or a Clause 29 6.48 GHz non-enhanced directional multi gigabit (non-EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW648 and~~ FORMAT equal to NON\_EDMG).

**8.64 GHz physical layer (PHY) protocol data unit (PPDU)**: A Clause 29 8.64 GHz enhanced directional multi gigabit (EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW864 and~~ FORMAT equal to EDMG) or a Clause 29 8.64 GHz non-enhanced directional multi gigabit (non-EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW864 and~~ FORMAT equal to NON\_EDMG).

**4.32+4.32 GHz physical layer (PHY) protocol data unit (PPDU)** : A Clause 29 4.32+4.32 GHz enhanced directional multi gigabit (EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW432+432 and~~ FORMAT equal to EDMG) or a Clause 29 4.32+4.32 GHz non-enhanced directional multi gigabit (non-EDMG) PPDU (TXVECTOR parameter ~~CH\_BANDWIDTH equal to CBW432+432 and~~ FORMAT equal to NON\_EDMG).

***TGay Editor: Change the following paragraph of subclause 10.3.2.18 in Draft 2.1 (P180L19)***

A CF-End frame sent to truncate a TXOP initiated by RTS frame carried in a non-EDMG duplicate PPDU format shall be sent using a non-EDMG duplicate PPDU format. The TXVECTOR parameters, CHANNEL\_AGGREGATION and CH\_BANDWIDTH\_SIGNALING of the CF-End frame shall be set to the same values as indicated by the RXVECTOR parameters of the DMG CTS frame, if received, or to the same values as indicated by the TXVECTOR parameters of the RTS frame otherwise.

***TGay Editor: Change the following paragraph of subclause 10.6.7.2 in Draft 2.1 (P181L28)***

A STA that sends a control frame in an EDMG PPDU in response to a frame carried in an EDMG PPDU shall set the TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION to indicate a channel width that is the same as the channel width indicated by the RXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the frame eliciting the response.

***TGay Editor: Change the following paragraph of subclause 10.6.7.6 in Draft 2.1 (P182L29)***

An EDMG STA that sends a Control frame in response to a frame carried in an EDMG PPDU shall set the TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION to the value indicated by the RXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the frame eliciting the response.

***TGay Editor: Change the following paragraph of subclause 10.6.7.6 in Draft 2.1 (P182L32)***

An EDMG STA that sends a Control frame in response to a frame carried in a non-EDMG duplicate PPDU shall set the TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION as follows:

***TGay Editor: Change the following paragraph of subclause 10.6.7.6 in Draft 2.1 (P182L34)***

* If the frame that elicited the response includes the RXVECTOR parameters CH\_BANDWIDTH\_SIGNALING, CH\_BANDWIDTH and CHANNEL\_AGGREGATION shall be set to a value that represents the equivalent channels indicated by the CH\_BANDWIDTH\_SIGNALING parameter;

***TGay Editor: Change the following paragraph of subclause 10.6.7.6 in Draft 2.1 (P183L01)***

* Otherwise if the STA received at least one EDMG PPDU as part of the current frame exchange sequence, CH\_BANDWIDTH and CHANNEL\_AGGREGATION parameters shall be set to the values of the RXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the last received EDMG PPDU in the current frame exchange sequence.

***TGay Editor: Change the following paragraph of subclause 10.6.7.6 in Draft 2.1 (P183L04)***

* Otherwise if the STA transmitted at least one EDMG PPDU or non-EDMG duplicate PPDU as part of the current frame exchange sequence, CH\_BANDWIDTH and CHANNEL\_AGGREGATION parameters shall be set to the values of the TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the last EDMG PPDU or non-EDMG duplicate PPDU, whichever came later, transmitted by the STA in the current frame exchange sequence.

***TGay Editor: Change the following paragraph of subclause 10.6.7.6 in Draft 2.1 (P183P08)***

* Otherwise, CH\_BANDWIDTH and CHANNEL\_AGGREGATION parameters shall be set to the estimated values of the RXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the frame that elicited the response.

***TGay Editor: Change the following paragraph of subclause 10.6.7.8 in Draft 2.1 (P182L25)***

A TXOP holder that transmits a Data or Management frame during a TXOP that was established using the bandwidth negotiation procedures specified in 10.3.2.9 and 10.3.2.18 shall set the TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION according to the following rules:

***TGay Editor: Change the following paragraph of subclause 10.6.7.8 in Draft 2.1 (P183L28)***

* The CH\_BANDWIDTH and CHANNEL\_AGGREGATION parameters shall be set to channels that were indicated in the RXVECTOR parameter CH\_BANDWIDTH\_SIGNALING of the DMG CTS frame that established the TXOP.

***TGay Editor: Change the following paragraph of subclause 10.6.7.8 in Draft 2.1 (P183L30)***

* The CH\_BANDWIDTH and CHANNEL\_AGGREGATION parameters may indicate a subset of the channels that were indicated as used in an immediately preceding received PPDU in the TXOP, if any, provided the transmitted PPDU is an EDMG PPDU.

***TGay Editor: Change the following paragraph of subclause 10.6.7.8 in Draft 2.1 (P183L33)***

* The CH\_BANDWIDTH and CHANNEL\_AGGREGATION parameters shall not indicate channels that were not used by all previous PPDUs sent in same TXOP.

***TGay Editor: Change the following paragraph of subclause 10.6.7.8 in Draft 2.1 (P183L36)***

A TXOP responder that transmits a PPDU as a result of a reverse direction grant shall set the TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the PPDU to the value of the RXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the received EDMG PPDU addressed to the TXOP responder and that granted the reverse direction.

***TGay Editor: Change the following paragraph of subclause 10.24.2.13 in Draft 2.1 (P188L35)***

An EDMG STA that initiates a PPDU transmission to peer EDMG STA shall not set the TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the PPDU to the channels in which the CCA were not idle according to Table 1, and shall set the TXVECTOR parameter SCRAMBLER\_INIT\_SETTING to a value that provides bandwidth information to the peer STA.

***TGay Editor: Change the following paragraph of subclause 10.40.7.3 in Draft 2.1 (P217L02)***

During an SP between a source DMG STA and a destination DMG STA, the source DMG STA may transmit a Grant frame to the destination DMG STA to relinquish the remainder of the SP to the destination DMG STA. In the Allocation Info field of the transmitted Grant frame, the source DMG STA shall set source AID field to the AID of the destination DMG STA, the destination AID field to the AID of the source DMG STA, the AllocationType field set to indicate SP, and the Allocation Duration field set to a value of 32 768 as defined in 9.5.2 (Dynamic Allocation Info field). The Duration field in the Grant frame shall be set to the time remaining in the SP minus TXTIME (Grant frame) minus aSIFSTime. The Beamforming Training subfield within the Beamforming Control field of the Grant frame shall be set to 0. Upon transmission of the Grant frame with the Beamforming Training field equal to 0, fFor the remainder of the SP, the roles of source DMG STA and destination DMG STA are swapped between the STAs. If both the source STA and destination STA are EDMG STAs, the destination STA shall not transmit frames with any bit set to 1 in ~~a channel bandwidth that is greater than the value of the~~ CH\_BANDWIDTH parameter if the corresponding bit in the RXVECTOR CH\_BANDWIDTH of the received Grant frame was 0.

***TGay Editor: Change the following paragraph of subclause 10.40.7.3 in Draft 2.1 (P217L15)***

During a TXOP between a TXOP holder and a TXOP responder, the TXOP holder may transmit a Grant frame to the TXOP responder to relinquish the remainder of the TXOP to the TXOP responder. In the transmitted Grant frame, the TXOP holder shall set source AID field to the AID of the TXOP responder, the destination AID field to the AID of the TXOP holder, the AllocationType field set to indicate CBAP, and the Allocation Duration field set to a value of 32 768 as defined in 9.5.2 (Dynamic Allocation Info field). The Duration field in the Grant frame shall be set to the time remaining in the TXOP minus TXTIME (Grant frame) minus aSIFSTime. The Beamforming Training subfield within the Beamforming Control field of the Grant frame shall be set to 0. Upon transmission of the Grant frame with the Beamforming Training field equal to 0, fFor the remainder of the TXOP, the roles of TXOP holder and TXOP responder are swapped between the STAs. If both the TXOP holder and TXOP responder are EDMG STAs, the TXOP responder shall not transmit frames with any bit set to 1 in ~~a channel bandwidth that is greater than the value of the~~ CH\_BANDWIDTH parameter if the corresponding bit in the RXVECTOR CH\_BANDWIDTH of the received Grant frame was 0.

***TGay Editor: Change the following paragraph of subclause 10.43.6.4.1 in Draft 2.1 (P245L06)***

A 2.16 GHz EDMG PPDU transmitted using a single space-time stream that includes the TRN field and is addressed to a STA that has the DMG TRN RX Only Capable subfield set to 1 in the STA’s EDMG Capabilities element shall have the DMG\_TRN parameter of the TXVECTOR set to 1 and the EDMG\_TRN\_LEN parameter of the TXVECTOR set to a value greater than 0 and less than 32. Otherwise, the DMG\_TRN parameter of the TXVECTOR shall be set to 0. If the EDMG\_TRN\_LEN parameter of the TXVECTOR of a PPDU sent to a STA that has set the DMG TRN RX Only Capable subfield equal to 1 is greater than 0, the CH\_BANDWIDTH parameter shall be set to ~~CBW216~~ a value having only 1 bit set to 1.

***TGay Editor: Change the following paragraph of subclause 10.43.10.5.2.4 in Draft 2.1 (P287L08)***

The initiator of a BRP TXSS requests to perform BRP TXSS over a 2.16+2.16 GHz or a 4.32+4.32 GHz channel by sending a BRP frame with setup that has the Channel Aggregation Requested field in the DMG Beam Refinement element set to 1 and with TXVECTOR parameter CHANNEL\_AGGREGATION equals to ~~CBW216+216 or CBW432+432~~ AGGREGATE. If the responder accepts the request by sending a BRP frame with setup with the Channel Aggregation Requested field set to 1 and the value of the TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION equal to the value of the RXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION of the BRP frame sent by the initiator, all BRP frames sent as part of the BRP TXSS shall have the same TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION.

***TGay Editor: Change the following paragraph of subclause 29.2.2 in Draft 2.1 (P324L10)***

* If the CH\_BANDWIDTH parameter is set to “01100000” and CHANNEL\_AGGREGATION parameter is set to AGGREGATE, then NCB is set to 1. Otherwise if CHANNEL\_AGGREGATION parameter is set to NOT\_AGGREGATE, then NCB is set to 2.

***TGay Editor: Change the following paragraph of subclause 29.2.2 in Draft 2.1 (P324L14)***

* If the CH\_BANDWIDTH parameter is set to “01111000” and CHANNEL\_AGGREGATION parameter is set to AGGREGATE, then *NCB* is set to 2. Otherwise if CHANNEL\_AGGREGATION parameter is set to NOT\_AGGREGATE, then *NCB* is set to 4.

***TGay Editor: Change the following cell in Table 43 Draft 2.1 (row of DCM\_BPSK)***

FORMAT is EDMG,

EDMG\_MODULATION is EDMG\_SC\_MODE,

~~CH\_BANDWIDTH is CBW216+216 or CBW432+432,~~

CHANNEL\_AGGREGATION is AGGREGATE,

STBC is 0,

NUM\_STS is 2

***TGay Editor: Change the following cell in Table 43 Draft 2.1***



***TGay Editor: Change the following cell in Table 43 Draft 2.1 (row of CH\_BANDWIDTH and FORMAT is EDMG)***

In the TXVECTOR, indicates the set of channels on which the PPDU is transmitted and the value of BW field in EDMG Header-A. In the RXVECTOR, indicates the value of the BW field in the EDMG Header-A of a received PPDU.

~~Enumerated type:~~

~~Bitmap defined as the BW field specified in Table 53. Together with the CHANNEL\_AGGREGATION parameter, this bitmap represents:~~

~~CBW216 for 2.16 GHz~~

~~CBW432 for 4.32 GHz~~

~~CBW648 for 6.48 GHz~~

~~CBW864 for 8.64 GHz~~

~~CBW216+216 for 2.16+2.16 GHz~~

~~CBW432+432 for 4.32+4.32 GHz~~

Tables 62-64 present the valid CH\_BANDWIDTH and CHANNEL\_AGGREGATION combinations.

***TGay Editor: Change the following cell in Table 43 Draft 2.1 (row of CH\_BANDWIDTH and FORMAT is NON\_EDMG)***

In the TXVECTOR, indicates the set of channels on which the PPDU is transmitted. In the RXVECTOR, indicates the estimated set of channels on which PPDU was received.

~~Enumerated type:~~

~~Bitmap defined as the BW field specified in Table 53. Together with the CHANNEL\_AGGREGATION parameter, this bitmap represents:~~

~~CBW432, CBW648, CBW864, CBW216+216, or CBW432+432~~

Tables 62-64 present the valid CH\_BANDWIDTH and CHANNEL\_AGGREGATION combinations.

***TGay Editor: Change the following paragraph of subclause 29.4.8 in Draft 2.1 (P422L13)***

In the transmit EVM accuracy test, each transmit chain of the transmitting STA shall be connected through a cable to one input port of the testing instrumentation. If the TXVECTOR parameter CH\_BANDWIDTH ~~is set to CBW432, CBW648, CBW864, CBW216+216, or CBW432+432~~ has more than 1 bit set to 1, the duplicate transmission in the two or more 2.16 GHz channels may be tested independently. In this case, the transmit EVM accuracy of each 2.16 GHz channel shall meet the required value defined in 20.4.4.1.2 using only the signal within thecorresponding channel.

***TGay Editor: Change the following paragraph of subclause 29.5.11.1.1 in Draft 2.1 (P475L01)***

* PPDUs transmitted with the TXVECTOR parameter EDMG\_MODULATION equal to EDMG\_SC\_MODE and with TXVECTOR parameters CH\_BANDWIDTH and CHANNEL\_AGGREGATION are set to any valid combination as defined in Tables 62-64 ~~equal to CBW216, CBW432, CBW648, CBW864, CBW216+216, and CBW432+432~~; and

***TGay Editor: Change the following paragraph of subclause 29.5.11.1.1 in Draft 2.1 (P475L04)***

* PPDUs transmitted with the TXVECTOR parameter NON\_EDMG\_MODULATION equal to NON\_EDMG\_DUP\_SC\_MODE and with TXVECTOR parameters CH\_BANDWIDTH ~~equal to CBW432, CBW648, CBW864, CBW216+216, and CBW432+432~~ with two or more bits set to 1

***TGay Editor: Change the following paragraph of subclause 29.5.11.1.1 in Draft 2.1 (P475L14)***

If the TXVECTOR parameter ~~CH\_BANDWIDTH~~ CHANNEL\_AGGREGATION is set to AGGREGATE

* ~~either CBW216+216 or CBW432+432~~, the transmission in the two (adjacent or non-adjacent) 2.16 GHz channels ~~(for CBW216+216)~~ or 4.32 GHz channels ~~(for CBW432+432)~~ may be tested independently.

***TGay Editor: Change the following paragraph of subclause 29.5.11.1.1 in Draft 2.1 (P475L17)***

In the two cases indicated above, transmit modulation accuracy of each 2.16 GHz channel (when NON\_EDMG\_MODULATION is set to NON\_EDMG\_DUP\_SC\_MODE or when ~~CH\_BANDWIDTH~~ CHANNEL\_AGGREGATION is set to AGGREGATE ~~(CBW216+216) or of each 4.32 GHz channel (when CH\_BANDWIDTH is set to CBW432+432)~~ shall meet the required value in Table 91 through Table 94 using only the signal within the corresponding 20 channel.

***TGay Editor: Change the following paragraph of subclause 29.6.11.1.1 in Draft 2.1 (P516L29)***

This subclause specifies the EVM test and corresponding requirements for PPDUs transmitted with the TXVECTOR parameter EDMG\_MODULATION equal to EDMG\_OFDM\_MODE and TXVECTOR

parameter CH\_BANDWIDTH and CHANNEL\_AGGREGATION equal ~~to CBW216, CBW432, CBW648, CBW864, CBW216+216, or CBW432+432~~ a valid entry in Tables 62-64.

***TGay Editor: Change the following paragraph of subclause 29.6.11.1.1 in Draft 2.1 (P518L06)***

The EVM shall not exceed an MCS dependent value provided in Table 107. If the TXVECTOR parameter ~~CH\_BANDWIDTH~~ CHANNEL\_AGGREGATION is set to AGGREGATE ~~either CBW216+216 or CBW432+432~~, the transmission in the two 2.16 GHz channels ~~(for CBW216+216)~~ or 4.32 GHz channels ~~(for CBW432+432)~~ may be tested independently. In this case, the transmit modulation accuracy of each 2.16 GHz channel ~~(CBW216+216)~~ or of each 4.32 GHz channel ~~(CBW432+432)~~ shall meet the required value in Table 107.

***TGay Editor: Change the following paragraph of subclause 29.12.3.2 in Draft 2.1 (P641L12)***

If the CH\_BANDWIDTH parameter has only a single bit set to 1 ~~parameter indicates a bandwidth~~ ~~configuration equal to CBW216~~, the number of space-time streams NUM\_STS is equal to 1, and DMG-TRN parameter is equal to 1, then the TRN field duration is defined as follows:

***TGay Editor: Change the following paragraph of subclause 29.12.3.2 in Draft 2.1 (P642L01)***

If the ~~CH\_BANDWIDTH~~ CHANNEL\_AGGREGATION parameter i~~s~~ equal to AGGREGATE ~~CBW216+216 or CBW432+432~~ and the NUM\_TX\_CHAINS parameter is equal to 2 or 4, ……. If the ~~CH\_BANDWIDTH~~ CHANNEL\_AGGREGATION parameter i~~s~~ equal to AGGREGATE ~~CBW216+216 or CBW432+432~~ and the NUM\_TX\_CHAINS parameter is equal to 6 or 8, then ….

***TGay Editor: Change the following paragraph of subclause 29.12.3.2 in Draft 2.1 (P642L05)***

If the ~~CH\_BANDWIDTH~~ CHANNEL\_AGGREGATION parameter i~~s~~ equal to NOT\_AGGREGATE ~~CBW216, CBW432, CBW648, or CBW864~~ and the NUM\_TX\_CHAINS parameter is equal to 1 or 2, then ……. If the ~~CH\_BANDWIDTH~~ CHANNEL\_AGGREGATION parameter is equal to NOT\_AGGREGATE ~~CBW216, CBW432, CBW648, or CBW864~~ and the NUM\_TX\_CHAINS parameter is equal to 3 or 4, then …... If the ~~CH\_BANDWIDTH~~ CHANNEL\_AGGREGATION parameter is equal to NOT\_AGGREGATE ~~CBW216, CBW432, CBW648, or CBW864~~ and the NUM\_TX\_CHAINS parameter is equal to 5, 6, 7, or 8, then….

***TGay Editor: Change the following paragraph of subclause 29.12.3.3 in Draft 2.1 (P642L26)***

If NUM\_USERS = 1, CH\_BANDWIDTH has only 1 bit set to 1~~= CBW216~~, and NUM\_STS = 1, then

***TGay Editor: Change the following paragraph of subclause 29.12.3.3 in Draft 2.1 (P642L28)***

If NUM\_USERS ≥ 1, CH\_BANDWIDTH has more than 1 bit set to 1~~≠ CBW216~~ and/or NUM\_STS ≠ 1, then

***TGay Editor: Change the following paragraph of subclause 29.12.3.3 in Draft 2.1 (P643L01)***

If NUM\_USERS = 1, CH\_BANDWIDTH has only 1 bit set to 1~~= CBW216~~, and NUM\_STS = 1, then TEDMG-STF 1 T and

***TGay Editor: Change the following paragraph of subclause 29.12.3.3 in Draft 2.1 (P643L03)***

If NUM\_USERS ≥ 1, CH\_BANDWIDTH has more than 1 bit set to 1~~≠ CBW216~~ and/or NUM\_STS ≠ 1, then

***TGay Editor: Change the following paragraph of subclause 29.12.3.3 in Draft 2.1 (P643L10)***

If the NUM\_USERS parameter is equal to 1, the CH\_BANDWIDTH parameter has only 1 bit set to 1 ~~is equal to CBW216~~, and the NUM\_STS parameter is equal to 1, then the EDMG-STF and EDMG-CEF fields are not transmitted and TEDMG-STF = 0 and TEDMG-CEF = 0.

***TGay Editor: Change the following paragraph of subclause 29.12.3.3 in Draft 2.1 (P643L13)***

If the NUM\_USERS parameter is greater than or equal to 1 and the CH\_BANDWIDTH parameter has more than 1 bit set to 1 ~~is not equal to CBW216~~ and/or the NUM\_STS parameter is not equal to 1, then the EDMG-STF and EDMG-CEF fields are transmitted with a time duration specified above.

***TGay Editor: Change the following paragraph of subclause 29.12.3.3 in Draft 2.1 (P643L24)***

If the NUM\_USERS parameter is equal to 1, the CH\_BANDWIDTH parameter has only 1 bit set to 1 ~~is equal to CBW216~~, and the NUM\_STS is equal to 1, then:

***TGay Editor: Change the following paragraph of subclause 29.12.3.3 in Draft 2.1 (P643L30)***

If the NUM\_USERS parameter is equal to 1, the CH\_BANDWIDTH parameter has more than 1 bit set to 1 ~~is not equal to CBW216~~ and/or the NUM\_STS parameter is not equal to 1, then:

***TGay Editor: Change Table 62, by adding the two columns:***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Channel configuration #**  | **CH\_BANDWIDTH****[LSB…MSB]** | **CHANNEL\_AGGREGATION** | **dot11** **Current** **Channel** **Width**  | **dot11** **Current** **Channel** **Center** **Frequency** **Index0**  | **dot11** **Current** **Primary** **Channel**  | **dot11** **Current** **Channel** **Center** **Frequency** **Index1**  |
| 1 | 10000000 | NOT\_AGGREGATE  |  |  |  |  |
| 2 | 01000000 |  |  |  |  |
| 3 | 00100000 |  |  |  |  |
| 4 | 00010000 |  |  |  |  |
| 5 | 00001000 |  |  |  |  |
| 6 | 00000100 |  |  |  |  |
| 7 | 11000000 |  |  |  |  |
| 8 |  |  |  |  |
| 9 | 01100000 |  |  |  |  |
| 10 |  |  |  |  |
| 11 | 00110000 |  |  |  |  |
| 12 |  |  |  |  |
| 13 | 00011000 |  |  |  |  |
| 14 |  |  |  |  |
| 15 | 00001100 |  |  |  |  |
| 16 |  |  |  |  |
| 17 | 11100000 |  |  |  |  |
| 18 |  |  |  |  |
| 19 |  |  |  |  |
| 20 | 01110000 |  |  |  |  |
| 21 |  |  |  |  |
| 22 |  |  |  |  |
| 23 | 00111000 |  |  |  |  |
| 24 |  |  |  |  |
| 25 |  |  |  |  |
| 26 | 00011100 |  |  |  |  |
| 27 |  |  |  |  |
| 28 |  |  |  |  |
| 29 | 11110000 |  |  |  |  |
| 30 |  |  |  |  |
| 31 |  |  |  |  |
| 32 |  |  |  |  |
| 33 | 01111000 |  |  |  |  |
| 34 |  |  |  |  |
| 35 |  |  |  |  |
| 36 |  |  |  |  |
| 37 | 00111100 |  |  |  |  |
| 38 |  |  |  |  |
| 39 |  |  |  |  |
| 40 |  |  |  |  |

***TGay Editor: Change Table 63, by adding the two columns:***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Channel configuration #**  | **CH\_BANDWIDTH****[LSB…MSB]** | **CHANNEL\_AGGREGATION** | **dot11** **Current** **Channel** **Width**  | **dot11** **Current** **Channel** **Center** **Frequency** **Index0**  | **dot11** **Current** **Primary** **Channel**  | **dot11** **Current** **Channel** **Center** **Frequency** **Index1**  |
| 41 | 11000000 | AGGREGATE  |  |  |  |  |
| 42 | 10100000 |  |  |  |  |
| 43 | 10010000 |  |  |  |  |
| 44 | 10001000 |  |  |  |  |
| 45 | 10000100 |  |  |  |  |
| 46 | 11000000 |  |  |  |  |
| 47 | 01100000 |  |  |  |  |
| 48 | 01010000 |  |  |  |  |
| 49 | 01001000 |  |  |  |  |
| 50 | 01000100 |  |  |  |  |
| 51 | 10100000 |  |  |  |  |
| 52 | 01100000 |  |  |  |  |
| 53 | 00110000 |  |  |  |  |
| 54 | 00101000 |  |  |  |  |
| 55 | 00100100 |  |  |  |  |
| 56 | 10010000 |  |  |  |  |
| 57 | 01010000 |  |  |  |  |
| 58 | 00110000 |  |  |  |  |
| 59 | 00011000 |  |  |  |  |
| 60 | 00010100 |  |  |  |  |
| 61 | 10001000 |  |  |  |  |
| 62 | 01001000 |  |  |  |  |
| 63 | 00101000 |  |  |  |  |
| 64 | 00011000 |  |  |  |  |
| 65 | 00001100 |  |  |  |  |
| 66 | 10000100 |  |  |  |  |
| 67 | 01000100 |  |  |  |  |
| 68 | 00100100 |  |  |  |  |
| 69 | 00010100 |  |  |  |  |
| 70 | 00001100 |  |  |  |  |

***TGay Editor: Change Table 64, by adding the two columns:***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Channel configuration #**  | **CH\_BANDWIDTH****[LSB…MSB]** | **CHANNEL\_AGGREGATION** | **dot11** **Current** **Channel** **Width**  | **dot11** **Current** **Channel** **Center** **Frequency** **Index0**  | **dot11** **Current** **Primary** **Channel**  | **dot11** **Current** **Channel** **Center** **Frequency** **Index1**  |
| 71 | 11110000 | AGGREGATE  |  |  |  |  |
| 72 |  |  |  |  |
| 73 | 11011000 |  |  |  |  |
| 74 |  |  |  |  |
| 75 | 11001100 |  |  |  |  |
| 76 |  |  |  |  |
| 77 | 01111000 |  |  |  |  |
| 78 |  |  |  |  |
| 79 | 01101100 |  |  |  |  |
| 80 |  |  |  |  |
| 81 | 11110000 |  |  |  |  |
| 82 |  |  |  |  |
| 83 | 00111100 |  |  |  |  |
| 84 |  |  |  |  |
| 85 | 11011000 |  |  |  |  |
| 86 |  |  |  |  |
| 87 | 01111000 |  |  |  |  |
| 88 |  |  |  |  |
| 89 | 11001100 |  |  |  |  |
| 90 |  |  |  |  |
| 91 | 01101100 |  |  |  |  |
| 92 |  |  |  |  |
| 93 | 00111100 |  |  |  |  |
| 94 |  |  |  |  |