IEEE P802.11  
Wireless LANs

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| LC RF multiplexing | | | | |
| Date: 2023-01-03 | | | | |
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Abstract

Comment resolution for SA ballot on P802.11bb/ D5.0. Resolution of comment CID 20 in doc. 11-23-xxxr0 related to 32.3.5. (Multiple transmit chains and multiple receive chains).

# Revision History

# Comments

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| --- | --- | --- | --- | --- |
| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| I-20 | 18.7 | 32.2.5 | Because LC operates in fully orthogonal spectrums, and uses the same PHY specification like RF, it can be operated parallel (i.e. multipexed) with RF channels by assuming that one antenna is RF and the other LC. This has been tested on 11ac chipsets. LC/RF multiplexing is more efficient than the currently designed ML operation framework where switching (i.e. LC/RF diversity) is allowed, rather than LC/RF multiplexing. | Add the content and new figure from doc. 11-23-0006 to subclause 32.3.5 |

# Editing instructions

**TGbb editor: Add the following text to 32.3.5:**

**32.3.5.4. Multiplexing of LC and RF bands**

The LC PHY with multiple transmit and receive chains may be used for multiplexing of LC and RF bands. An example is shown in Figure 32-X (Multiplexing of LC and RF bands), where one antenna operates in the LC band and the other antenna operates in the corresponding RF band, following the mappings defined in Table 32-1 (Channel mapping between 5 GHz and 6 GHz RF to LC IF).

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**Figure 32-X—Multiplexing of LC and RF bands**

When multiplexing LC and RF bands, transmit chains 1 to N*LC* shall connect to LC optical antennas as defined in 32.3.2 (Transmitter block diagram) and transmit chains N*LC*+1 to N*TX* shall connect to RF antennas, as defined in 19.3 (HT PHY), 21.3. (VHT PHY) and 27.3 (HE PHY) for an LC PHY with HT, VHT and HE support, respectively, where N*LC* and N*TX* define the number of LC antennas and the total number of TX antennas, respectively.

When multiplexing LC and RF bands, CCA shall use all LC and RF antenna ports, as defined in 32.3.7.1 (CCA requirements). Moreover, all LC and RF antenna ports shall use the same channel mapping as defined in 32.3.4 (Channel numbering), cf. Table 32-1 (Channel mapping from 5 GHz and 6 GHz RF to LC IF).

An LC STA with multiplexing of LC and RF bands is fully interoperable with an LC STA supporting LC only. The LC STA with multiplexing of LC and RF bands can use up to N*LC* streams, when connecting to an LC STA supporting LC only.

An LC STA with multiplexing of LC and RF bands is fully interoperable with a STA supporting RF only. The LC STA with multiplexing of LC and RF bands can use up to N*TX*-N*LC* streams, same as the STA supporting RF only.