

# APEX STANDARDS

Wi-Fi 6 Standard and Amendments Section Search Engine with Technical Clause Extraction

**M**aximize the value of your patent portfolio with our Wi-Fi 6 Standards Section Search Engine—tailored for professional inventors, patent attorneys, and portfolio managers. This tool helps identify relevant patents in your portfolio by comparing claims against Wi-Fi 6 (IEEE 802.11ax) standards and amendments.

### Use Case Scenarios

**Portfolio managers** can efficiently identify Wi-Fi 6-related patents by utilizing our search engine, which narrows down results to relevant sections of the standards. This targeted approach helps managers quickly pinpoint patents with potential standard essentiality.

**Patent attorneys and inventors** can thoroughly evaluate the standard essentiality of patent claims or draft claims. The search engine supports section-level searches, meaning that when users input specific keywords, the results are restricted to relevant sections. This enables the mapping of claim elements to corresponding technical clauses within those sections.

This powerful feature lays the groundwork for pre-claim charting, offering patent holders an early assessment of standard essentiality. It also provides a foundation for more refined claim charts, which can be used in licensing negotiations or even litigation, supporting the process with clear, clause-to-claim mappings.

Our tool helps assess patents' relevancy to Wi-Fi 6 standards and amendments:

**802.11-2020: Wireless LAN MAC and PHY specifications.**

<https://ieeexplore.ieee.org/document/9363693>

**Amendment 1: Enhancements for High-Efficiency WLAN.**

<https://ieeexplore.ieee.org/document/9442429>

**Amendment 2: Enhanced Throughput for License-exempt Bands (45+ GHz).**

<https://ieeexplore.ieee.org/document/9502046>

**Amendment 3: Wake-Up Radio Operation.**

<https://ieeexplore.ieee.org/document/9570110>

**Amendment 4: Enhancements for Positioning.**

<https://ieeexplore.ieee.org/document/10058117>

**Amendment 5: Enhancements for Next Generation V2X (Vehicle-to-Everything).**

<https://ieeexplore.ieee.org/document/10063942>

### Key Features & Benefits

**Relevant Section Identification:** Instantly find relevant sections and clauses, saving time and improving accuracy.

**SEP Claim Charting:** Expedites creation of SEP claim charts, helping define how patents align with Wi-Fi 6 standards.

**Discover Licensing Opportunities:** Uncover new licensing candidates and revenue streams.

**Generate Licensing Revenue:** Monetize patents by identifying potential licensing deals.

**Automation & Efficiency:** Automates the patent analysis process, reducing manual effort and speeding up decision-making.

### Drive Innovation and Revenue

Our tool helps uncover new licensing opportunities and generate revenue from your patents while driving innovation in the Wi-Fi 6 ecosystem. To learn more:

[www.apexstandards.com](http://www.apexstandards.com)

[support@apexstandards.com](mailto:support@apexstandards.com)

Search:  802.11-2020 (Main 802.11ax Wifi 6)  Amend.1 (High-Efficiency WLAN)  Amend.2 (License-exempt Bands)  Amend.3 (Wake-Up Radio)  Amend.4 (Positioning)  Amend.5 (Next Gen V2X)

beamforming "mu mimo"

Is there a particular section to focus on? For example, you can put '19' to restrict the search under Section 19. If you put '19.2', you would restrict the search of all sub-sections under Section 19.2.

**Ask**

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Session 10 On Fri, Sep 20, 4:05 PM PDT, you asked about: "beamforming "mu mimo" / Source: Amend.1 (High-Efficiency WLAN) / Source: Amend.2 (License-exempt Bands) / Source: Amend.3 (Wake-Up Radio)

[1] IEEE 802.11ax-2021 Amendment 1 / 10.23.2.9 TXOP limits  
10.3.2.10 Any frames required for beamforming as specified in 10.31, 10.36... and NDP or transmission of a Beamforming Report Poll frame, where these...

[2] IEEE 802.11ax-2021 Amendment 1 / 26.5.2.2 Rules for soliciting UL MU frames  
AP should not apply transmit beamforming to the following: Non-HT PPDUs...

[3] IEEE 802.11ax-2021 Amendment 1 / 26.7.1 General  
26.7.1 General Transmit beamforming and DL MU-MIMO require knowledge... channel state in an HE compressed beamforming/CQI report carried in one or more... in one or more HE Compressed Beamforming/CQI frames. There are three types... three types of HE compressed beamforming/CQI report: SU feedback: The HE... SU feedback: The HE compressed beamforming/CQI report consists of an HE Compressed... consists of an HE Compressed Beamforming Report field, MU feedback: The... MU feedback: The HE compressed beamforming/CQI report consists of an HE Compressed... consists of an HE Compressed Beamforming Report field and HE MU Exclusive... Report field and HE MU Exclusive Beamforming Report field. CQI feedback: The... CQI feedback: The HE compressed beamforming/CQI report consists of an HE CQI... CQI feedback. The HE compressed beamforming/CQI report is carried in a single... carried in a single HE Compressed Beamforming/CQI frame if the resulting frame... (see 26.7.3). Otherwise, the HE beamforming feedback is segmented, and each... is carried in an HE Compressed Beamforming/CQI frame. An HE beamformer shall... length for the HE compressed beamforming/CQI report that is the minimum... maximum length of the HE compressed beamforming/CQI report that the HE beamformer...

The user-friendly search interface enables users to select specific documents and search for keywords within technical sections, ensuring precise mapping of claim elements to standard sections—key to meeting standard essentiality requirements in claim charts. For instance, when negotiating Wi-Fi 6 licensing terms, it may be necessary to map a patent's claim elements to sections of the core IEEE 802.11ax (Wi-Fi 6) standard and relevant amendments. The search engine uses keyword-based queries, allowing users to refine and compare results iteratively. Each session is assigned a unique Session ID, with a Q&A history feature that lets users track, save, and document their search history directly in the browser for future reference.