Configure Advanced Radio Settings on a WAP571 or WAP571E

Objective

Radio settings are used to configure the wireless radio antenna and its properties on a wireless access point (WAP) so that communications can be fast, congestion-free, and tailored to the desired network setup. This configuration is helpful in a situation where the WAP is surrounded by other WAPs, and settings like channel mode and frequency need to be changed to achieve smooth communication. If multiple WAPs in close proximity are broadcasting at the same frequency or channel, the transmitted data can become corrupted or canceled out, which greatly decreases performance.

This article explains how to configure Advanced Radio Settings on your WAP571 or WAP571E.

Note: If you want to configure the Basic Radio Settings of your WAP, click here for instructions.

Applicable Devices

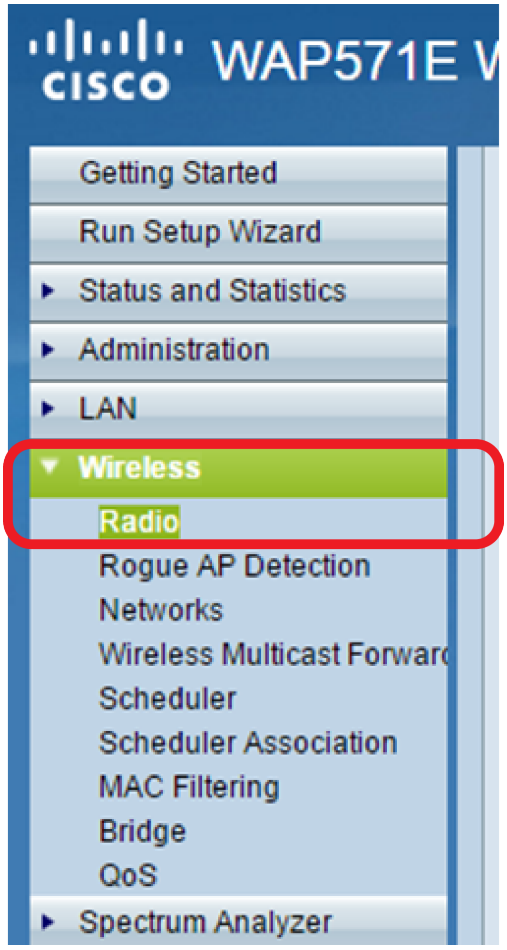
- WAP500 Series — WAP571, WAP571E

Software Version

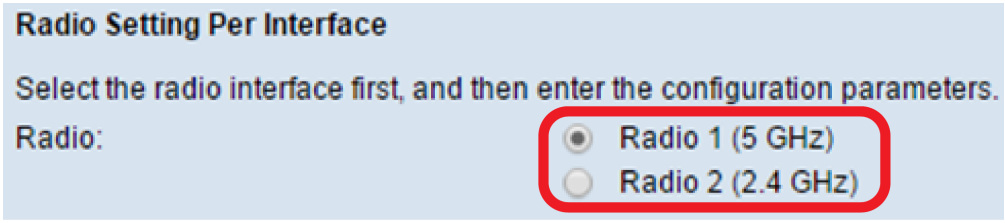
- 1.0.0.15

Configure Advanced Radio Settings

Step 1. Log in to the access point web-based utility then choose Wireless > Radio.

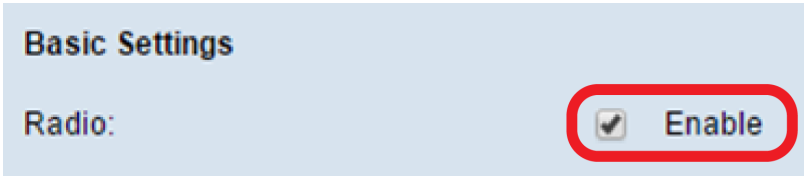


Step 2. From the Radio Setting Per Interface area, click on the Radio that you want to configure.

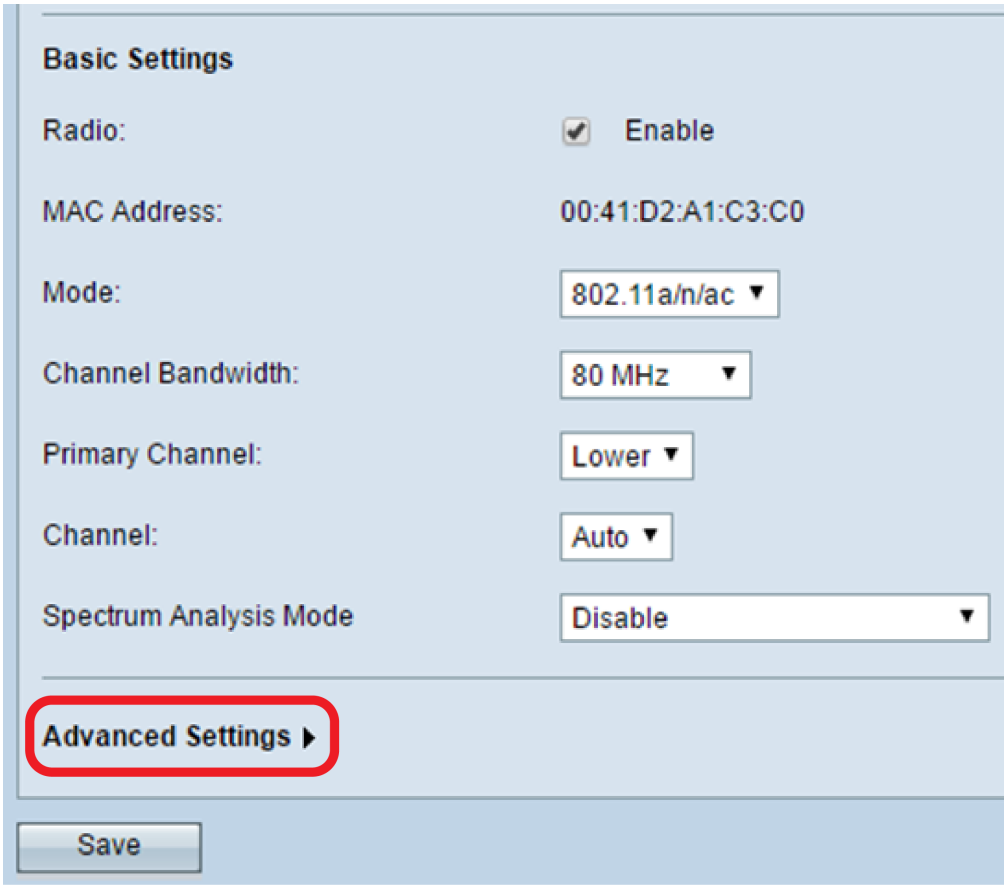


- Radio 1 (5 GHz) — Faster but has shorter range
- Radio 2 (2.4 GHz) — More compatible with older devices and has a wider range

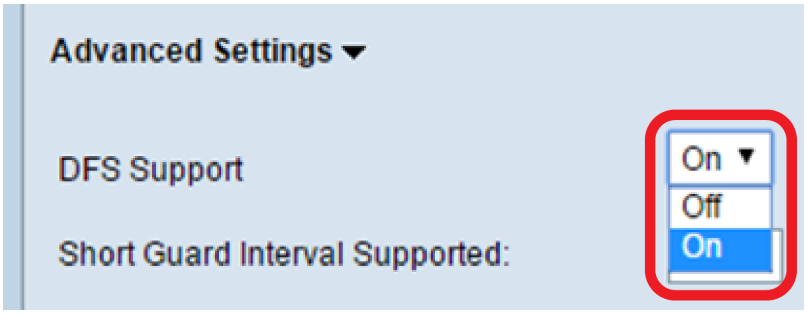
Step 3. Click the **Radio** checkbox in the Basic Settings area to enable it. **Note:** The Radio setting is checked by default



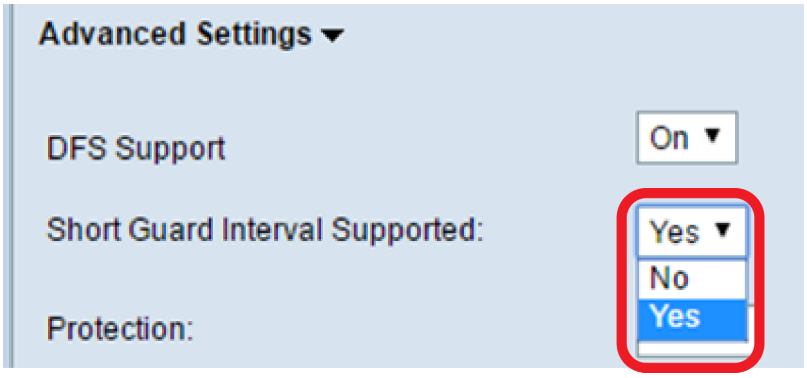
Step 4. Click **Advanced Settings** to configure settings for the chosen radio.



Step 5. (Optional) Choose from the DFS Support drop-down list to either enable (On) or disable (Off) this feature. Dynamic Frequency Selection (DFS) automatically selects channel frequencies with the lowest interference. The default is On. **Note:** The DFS Support drop-down is only available if you are configuring Radio 1 (5 GHz).



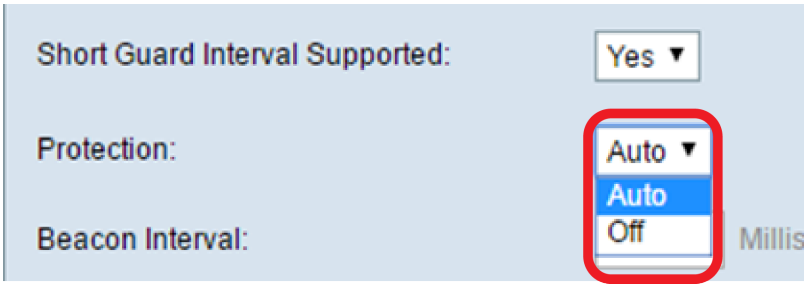
Step 6. (Optional) Choose an option from the Short Guard Interval Supported drop-down list. The guard interval is the amount of time that the WAP waits between transmissions, which prevents interference. The guard interval can be shortened to increase throughput by up to 10 percent. **Note:** This option is only available if you chose a mode that contains 802.11n from the Mode drop-down list of the Basic Settings area.



You can choose from the following options:

- Yes — Reduces transmission time to every 400 nanoseconds when communicating with clients that also support the short guard interval. This is the default option.
- No — Keeps transmission time to every 800 nanoseconds.

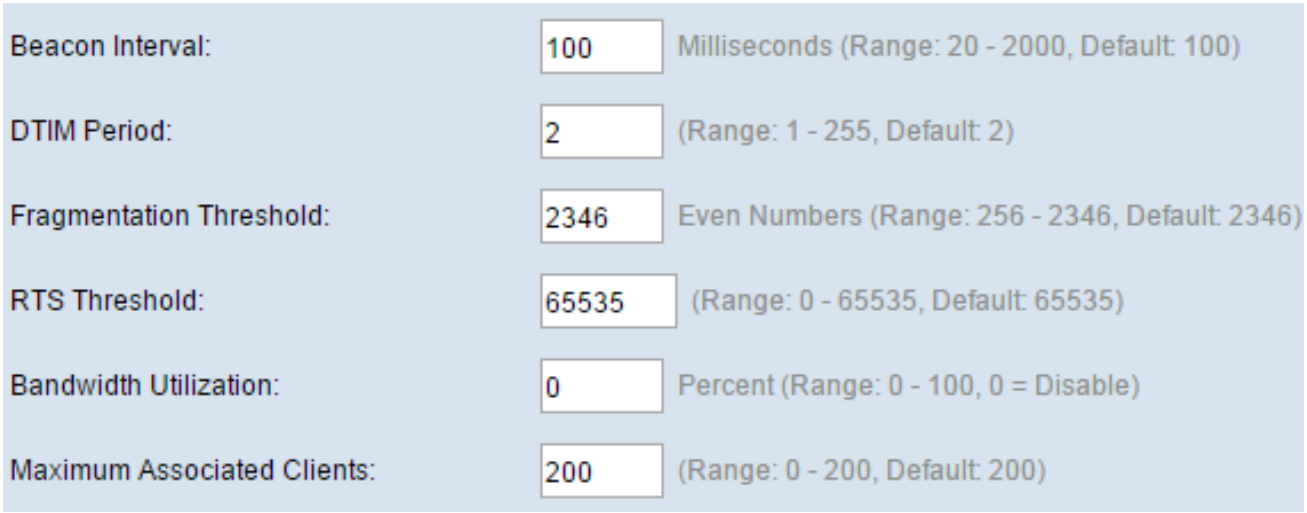
Step 7. Choose an option from the Protection drop-down list. The protection feature contains rules to guarantee that 802.11 transmissions do not cause interference with legacy stations or applications.



You can choose from the following options:

- Auto — Enables protection when legacy devices are within the range of the WAP device. This is the default option.
- Off — Disables the protection feature.

Step 8. In the *Beacon Interval* field, enter the interval value in milliseconds between beacon frame transmissions. Beacon frames announce the existence of the wireless network. The value must be between 20 to 2000 milliseconds. The default behavior is to send a beacon frame once every 100 milliseconds. It is highly recommended to keep this value, as a misconfigured beacon interval can cause clients to be unable to connect.



Step 9. In the *DTIM* Period field, enter an integer from 1 to 255 beacons to specify the Delivery Traffic Information Map (DTIM) period. The DTIM period indicates how often, in terms of beacon frames, the clients served by your WAP device should check for buffered data still awaiting pickup. The default value is 2, which specifies that clients will check for buffered data on your WAP device on every second beacon frame.

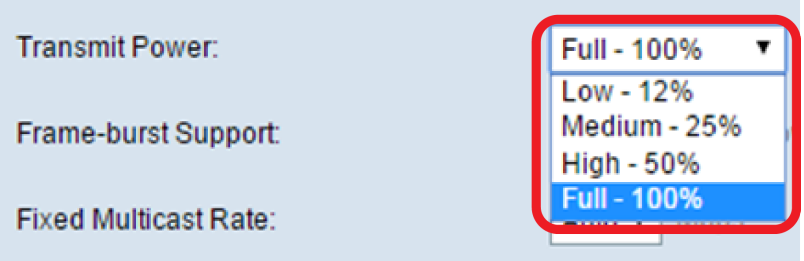
Step 10. In the *Fragmentation Threshold* field, enter an even number between 256 and 2346 bytes to specify the size limit for packets transmitted over the network. If a packet exceeds the fragmentation threshold, the fragmentation function is activated and the packet is sent as multiple 802.11 frames. By default, fragmentation is off at a threshold of 2346 bytes. Fragmentation is not recommended unless you experience radio interference.

Step 11. In the *RTS Threshold* field, enter an integer between 0 and 2347 to specify the Request to Send (RTS) Threshold value. The default is 2346. A lower threshold value sends packets more

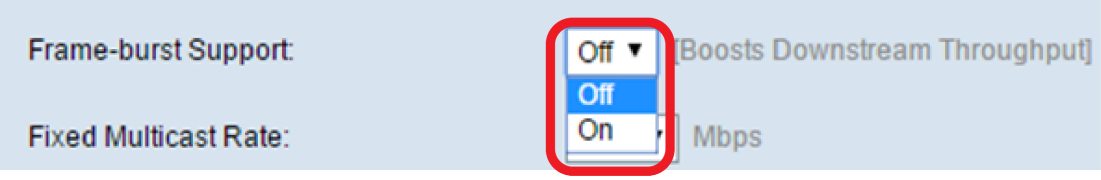
frequently which results in higher bandwidth consumption and quicker recovery from collisions or interference on the network. A higher threshold value sends packets less frequently which results in lower bandwidth consumption and a longer recovery time from collisions or interference on the network.

Step 12. In the *Maximum Associated Clients* field, enter the maximum number of clients that can connect to the WAP at the same time. The range is 0 to 200, and is set to 200 by default.

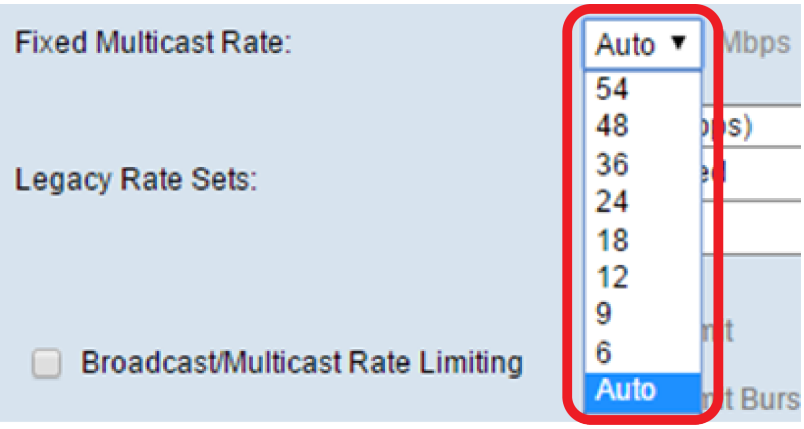
Step 13. In the Transmit Power drop-down list, choose the percentage of transmit power the WAP uses when broadcasting. A high percentage is more cost-efficient, since it gives the WAP the widest range and thus requires fewer access points to cover the same area. A low percentage requires devices be close to each other, but reduces overlapping and interference among other WAPs. The default value is 100%.



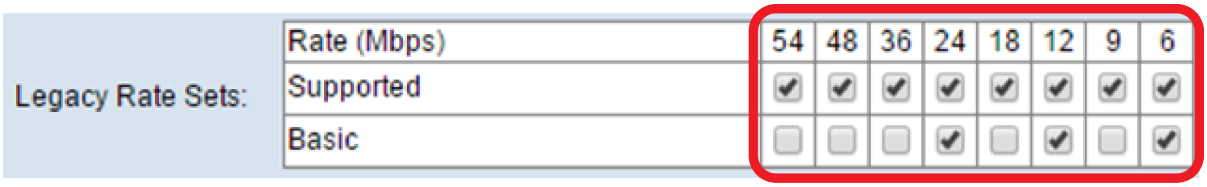
Step 14. In the Frame-burst Support drop-down list, choose either Off or On to disable or enable this feature. Enabling this feature may increase downstream throughput, as it lets the radio quickly send a series of frames in succession for a brief period of time.



Step 15. In the Fixed Multicast Rate drop-down list, choose the transmission rate in Mbps for broadcast and multicast packets. The range of possible values is determined by the radio mode in the Basic Settings area. Choosing Auto lets the WAP automatically choose the best rate based on the connected clients.

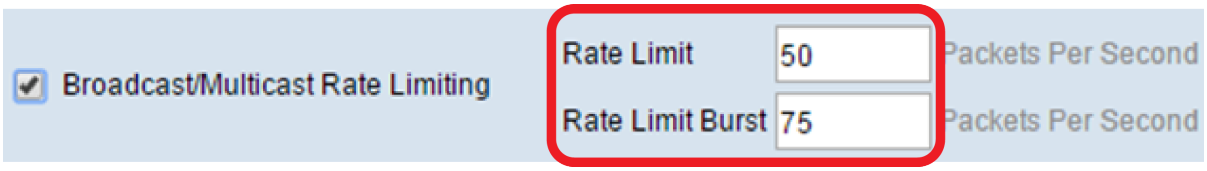


Step 16. In the Legacy Rate Sets table, check the checkboxes below the available rates to determine the Supported and Basic Rate Sets. The Supported Rate Sets indicate rates that the WAP supports, while the Basic Rate Sets are the rates that the WAP advertises to the network to set up communication with other devices. It is more efficient to have a WAP broadcast a subset of its supported rates. The rates are in Mbps.



Note: In order to choose a rate as Basic, it must also be chosen as Supported. Step 17. (Optional) Check the Broadcast/Multicast Rate Limiting checkbox if you want to limit the number of packets transmitted across the network. By default, this feature is disabled. If you do not want to enable this feature, skip to Step 19.

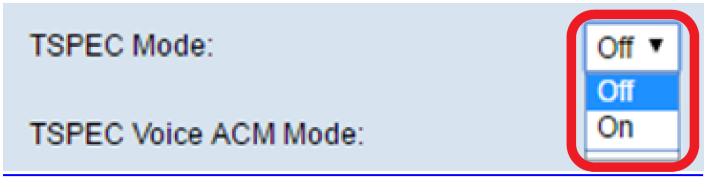
Step 18. (Optional) If you enabled Broadcast/Multicast Rate Limiting, the *Rate Limit* and *Rate Limit Burst* fields will become available. Enter in the appropriate values for each field.



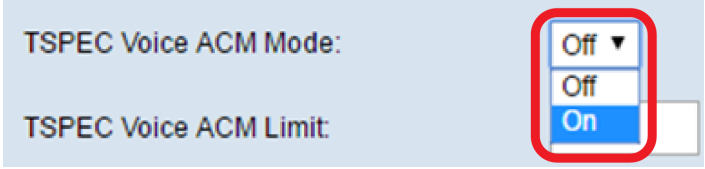
The fields are defined as:

- Rate Limit — The rate limit for multicast and broadcast traffic. This rate is expressed in packets per second. The range is 1 to 50, and the default is 50.
- Rate Limit Burst — Indicates the amount of traffic that is allowed to pass as a temporary burst even if it exceeds the above maximum rate. The range is 1 to 75, and the default is 75.

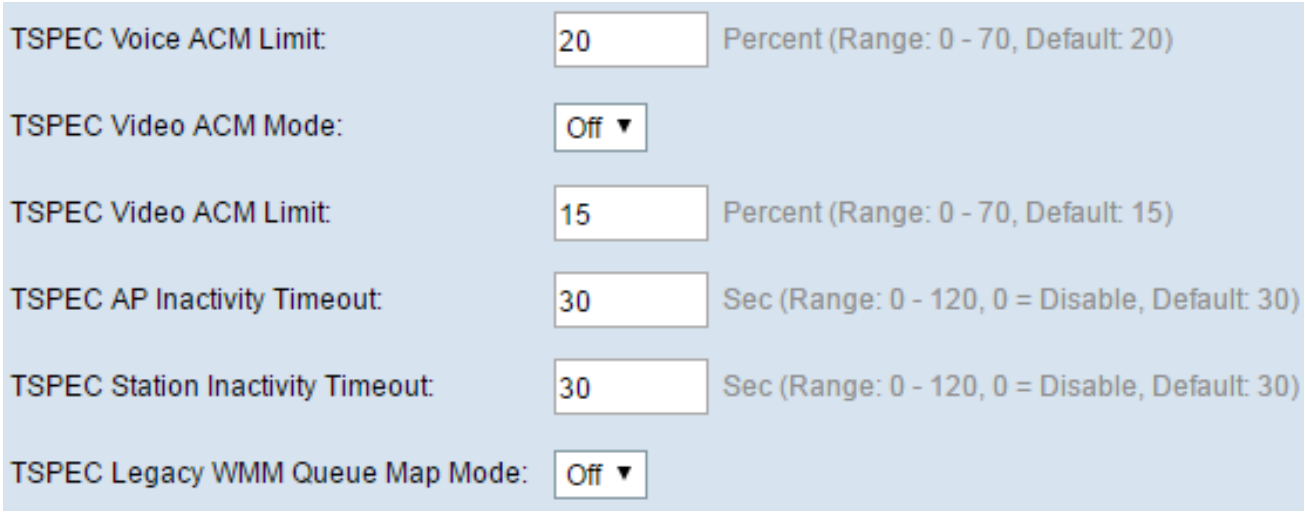
Step 19. In the TSPEC Mode drop-down list, choose the traffic specification (TSPEC) mode for the WAP. TSPEC is sent from a Quality of Service (QoS)-capable client requesting a certain amount of traffic from the WAP. Choosing On enables TSPEC and the WAP handles traffic from QoS devices. Off disables TSPEC and QoS devices are not given priority.



Step 20. In the TSPEC Voice ACM Mode drop-down list, choose a mode that regulates mandatory admission control (ACM) for the voice access category. Choosing On means that a station must send a TSPEC request for bandwidth to the WAP before sending or receiving a voice traffic stream. Off allows stations to send and receive voice traffic without a TSPEC request. This allows the WAP to have control over bandwidth usage for voice traffic.



Step 21. In the *TSPEC Voice ACM Limit* field, enter the maximum amount of traffic the WAP tries to transmit through wireless with a voice AC to gain access. The range is 0 to 70 percent, and the default is 20 percent.



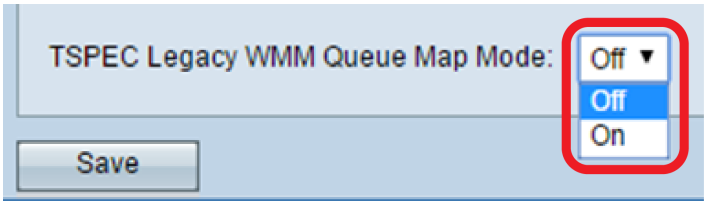
Step 22. In the TSPEC Video ACM Mode drop-down list, choose a mode that regulates mandatory admission control (ACM) for the video access category. Choosing On means that a station must send a TSPEC request for bandwidth to the WAP before sending or receiving a video traffic stream. Off allows stations to send and receive video traffic without a TSPEC request. This allows the WAP to have control over bandwidth usage for video traffic.

Step 23. In the *TSPEC Video ACM Limit* field, enter the maximum amount of traffic the WAP tries to transmit through wireless with a video admission control to gain access. The range is 0 to 70 percent, and the default is 15 percent.

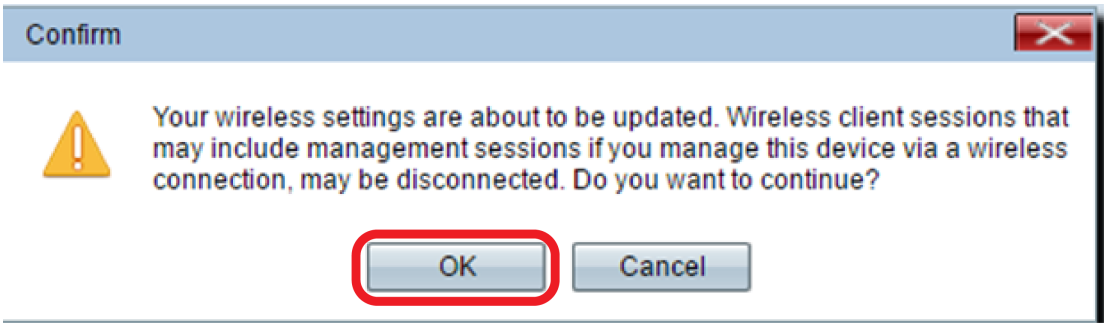
Step 24. In the *TSPEC AP Inactivity Timeout* field, enter the value in seconds for a WAP to detect a downlink traffic specification as idle before deleting it. The range is 0 to 120 seconds, and the default is 30. Entering 0 disables this feature.

Step 25. In the *TSPEC Station Inactivity Timeout* field, enter the number of seconds for a WAP device to detect an uplink traffic specification as idle before deleting it. The range is 0 to 120 seconds, and the default is 30. Entering 0 disables this feature.

Step 26. In the TSPEC Legacy WMM Queue Map Mode drop-down list, choose whether to enable (On) or disable (Off) the intermixing of legacy traffic on queues operating as ACM. By default, this feature is disabled.



Step 27. Click **Save.** Step 28. A pop-up window will appear warning that wireless connections may be disconnected. Click **OK** to continue.



You should now have successfully configured the Advanced Radio Settings of your WAP571 or WAP571E.