

# Configuration of Basic Wireless Radio Settings on the WAP121 and the WAP321 Access Points

## Objective

Radio settings are used to configure the wireless radio antenna and its properties in the wireless access point (WAP) device so that communications can be fast, congestion free, and tailored specific to the desired network setup in implementation. 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. This ensures that their channels do not interfere with each other. This article explains how to configure the global and basic radio settings on WAP121 and WAP321 access points.

**Note:** If you wish to configure the advanced radio settings, refer to the article [Advanced Wireless Radio Settings on WAP121 and WAP321 Access Points](#) for more information.

## Applicable Devices

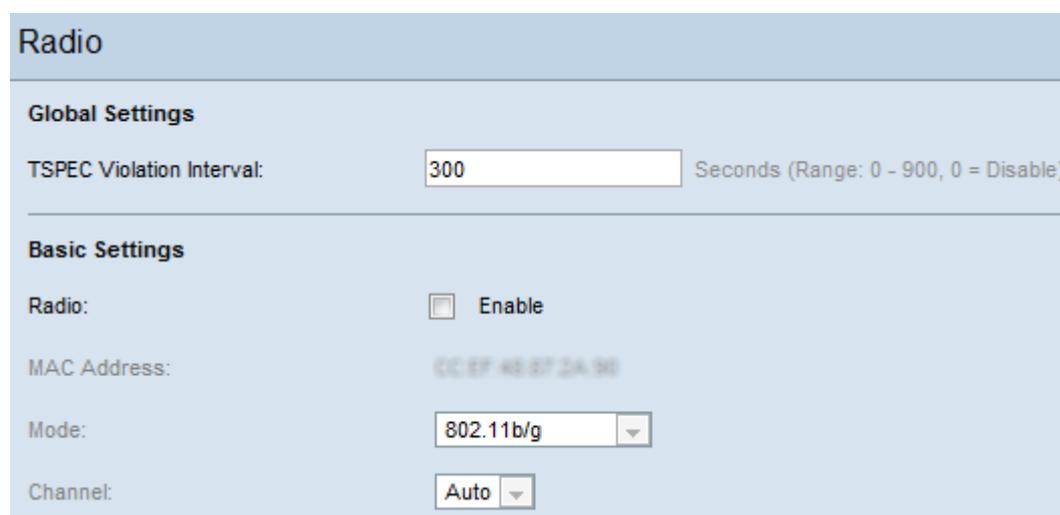
- WAP121
- WAP321

## Software Version

- 1.0.3.4

## Radio Configuration

Step 1. Log in to the Access Point Configuration Utility and choose **Wireless > Radio**. The *Radio* page opens:



The screenshot shows the 'Radio' configuration page. It has a light blue header with the title 'Radio'. Below the header, there are two main sections: 'Global Settings' and 'Basic Settings'. In the 'Global Settings' section, there is a 'TSPEC Violation Interval' field with a value of '300' and a label 'Seconds (Range: 0 - 900, 0 = Disable)'. In the 'Basic Settings' section, there is a 'Radio' checkbox that is checked and labeled 'Enable'. Below that is a 'MAC Address' field with the value 'CC:8F:4B:87:2A:90'. There is also a 'Mode' dropdown menu set to '802.11b/g' and a 'Channel' dropdown menu set to 'Auto'.

## Global Settings

**Radio**

**Global Settings**

TSPEC Violation Interval:  Seconds

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**Basic Settings**

Radio:  Enable

MAC Address:

Mode:  ▼

Channel:  ▼

Step 1. In the Global Settings area, enter the time interval in seconds in the Traffic Specification (TSPEC) Violation Interval field. This is the interval at which the WAP reports through the system log and SNMP traps to the associated clients that do not adhere to mandatory admission control procedures. TSPEC is a traffic specification that is sent from the client to an AP which requests the amount of network access for the data which it represents.

**Note:** For more information about system log, refer to the article [Log Settings Configuration and Status on WAP121 and WAP321 Access Points](#).

Step 2. To save your settings, scroll to the bottom of the *Radio* page and click **Save**.

## Basic Radio settings Configuration

**Radio**

**Global Settings**

TSPEC Violation Interval:  Seconds

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**Basic Settings**

Radio:  Enable

MAC Address:

Mode:  ▼

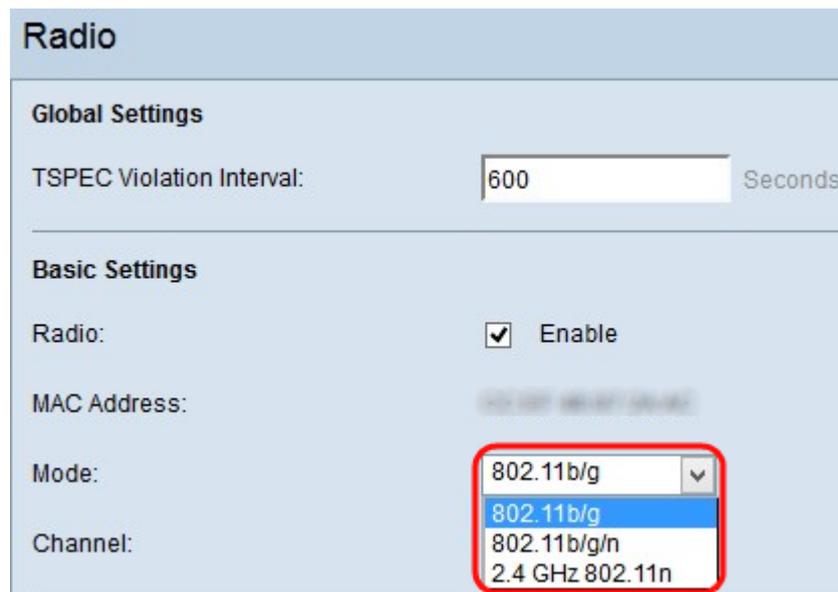
Channel:  ▼

Step 1. Check the **Enable** check box in the Radio field to enable the radio interface.

The MAC Address field shows the MAC address of the radio interface.

**Note:** If your device is WAP321, then go to [WAP321](#), otherwise go to [WAP121](#) because in the WAP321 some more modes are added to the normal WAP121 modes

## WAP121



**Radio**

**Global Settings**

TSPEC Violation Interval:  Seconds

**Basic Settings**

Radio:  Enable

MAC Address:

Mode:  ▼

Channel:

- 802.11b/g
- 802.11b/g/n
- 2.4 GHz 802.11n

Step 1. Choose the desired radio mode from the Mode drop-down list. The following three modes are available on the WAP121:

- 802.11b/g — Only 802.11b and 802.11g supported clients can connect to the WAP device. The clients can get at least 11 Mbps bandwidth when this mode is selected.
- 802.11b/g/n — All the clients (such as 802.11b, 802.11g and 802.11n clients) which operate in the 2.4 GHz frequency can connect to the WAP. This mode may have a data rate of up to 75 Mbps.
- 2.4 GHz 802.11n — Only 802.11n clients, which operate in the 2.4-GHz frequency, can connect to the WAP. This mode has a data rate of at least 54 Mbps.

**Note:** All of the 802.11n modes has some restriction on the options of VAP security modes. It forcefully sets security to none for some modes or enables CCMP(AES) cipher suite in the Data encryption technique. This information will come in use in some configurations, like configuration of WorkGroup Bridge. For the configuration of WorkGroup Bridge refer to article [Configure Work Group Bridge on WAP121 and WAP321 Access Points](#).

**Note:** If you have chosen 802.11b/g as the radio mode, skip to [Step 4](#).

### Radio

**Global Settings**

TSPEC Violation Interval:  Seconds

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**Basic Settings**

Radio:  Enable

MAC Address:

Mode:

Channel Bandwidth:

Primary Channel:

Channel:

Step 2. Choose the Channel Bandwidth for the radio from the Channel Bandwidth drop-down list. The drop-down list has two types of bandwidths 20MHz and 20/40 MHz which is used for higher data rates.

**Note:** The 802.11n is the only specification that allows a 40 MHz-wide channel in addition to the legacy 20 MHz channel available with other modes.

**Note:** If you have chosen 20 MHz, skip to [Step 4](#).

### Radio

**Global Settings**

TSPEC Violation Interval:  Seconds

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**Basic Settings**

Radio:  Enable

MAC Address:

Mode:

Channel Bandwidth:

Primary Channel:

Channel:

Step 3. When the access point is configured to use 40-MHz channel bandwidth, you can specify the location of the primary channel as either the upper half or lower half of the 40-MHz channel. When you choose a 40-MHz channel, the channel choice always refers to the primary channel. From the Primary Channel drop-down list, choose an option:

- Upper — Sets the upper 20 MHz channel in the 40 MHz band as the Primary Channel.

- Lower — Sets the lower 20 MHz channel in the 40 MHz band as the Primary Channel.

The image shows a configuration interface for a wireless access point. It is divided into two sections: 'Basic Settings' and 'Advanced Settings'. In the 'Basic Settings' section, the 'Radio' is enabled, the 'Mode' is set to '802.11b/g/n', the 'Channel Bandwidth' is '20/40 MHz', and the 'Primary Channel' is 'Lower'. The 'Channel' dropdown menu is open, showing 'Auto' as the selected option, with a list of channels 1 through 7 below it. The 'Advanced Settings' section includes 'Short Guard Interval Supported' and 'Protection'.

Step 4. Choose the portion of the radio spectrum that the radio uses to transmit and receive from the Channel drop-down list. The drop-down list has auto and the channels which range from 1 to 11. Please make sure that you do not have same channel and SSID on multiple access points. The channels are divided between the lower primary channel and the upper primary channel. The first 1 to 7 channels are under lower primary channel, and 5 to 11 are under upper primary channel. If you choose 802.11 b/g, then all the channels from 1 to 11 are shown in the Channel drop-down list.

**Note:** If auto is chosen, the WAP scans the available channels and chooses a channel where the least traffic is detected.

Step 5. Click **Save** to save the settings.

## WAP321

## Radio

**Global Settings**

TSPEC Violation Interval:  Seconds

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**Basic Settings**

Radio:  Enable

MAC Address:

Mode:  ▼

Channel Bandwidth:

Primary Channel:

Channel:

- 802.11a/n
- 802.11a
- 802.11b/g
- 802.11a/n
- 802.11b/g/n
- 5 GHz 802.11n
- 2.4 GHz 802.11n

Step 1. Choose the desired radio mode from the Mode drop-down list. The following six modes are available on the WAP321 :

- 802.11a — Only 802.11a supported clients can connect to the WAP device. These devices may have data rate of at least 6 to 54 Mbps.
- 802.11b/g — Only 802.11b and 802.11g supported clients can connect to the WAP device. The clients can get at least 11 Mbps bandwidth when this mode is selected.
- 802.11a/n — Only 802.11a and 802.11n supported clients can connect to the WAP device.
- 802.11b/g/n — All the clients (such as 802.11b, 802.11g and 802.11n clients) which operate in the 2.4 GHz frequency can connect to the WAP. This mode may have a data rate of up to 75 Mbps.
- 5 GHz 802.11n — Only 802.11n clients operating in the 5.0-GHz frequency can connect to the WAP device.
- 2.4 GHz 802.11n — Only 802.11n clients, which operate in the 2.4-GHz frequency, can connect to the WAP. This mode has a data rate of at least 54 Mbps.

**Note:** All of the 802.11n modes has some restriction on the options of VAP security modes. It forcefully sets security to none for some modes or enables CCMP(AES) cipher suite in the Data encryption technique. This information will come in use in some configurations, like configuration of WorkGroup Bridge. For the configuration of WorkGroup Bridge refer to article [Configure Work Group Bridge on WAP121 and WAP321 Access Points](#).

**Note:** If you have chosen 802.11b/g or 802.11a as the radio mode, then skip to [Step 4](#).

### Radio

**Global Settings**

TSPEC Violation Interval:  Seconds

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**Basic Settings**

Radio:  Enable

MAC Address: CC:EF:48:87:49:70

Mode:  ▾

Channel Bandwidth:  ▾

Primary Channel:  ▾

Channel:  ▾

Step 2. Choose the Channel Bandwidth for the radio from the Channel Bandwidth drop-down list. The drop-down list has two types of bandwidths 20MHz and 20/40 MHz which is used for higher data rates.

**Note:** The 802.11n is the only specification allows a 40 MHz-wide channel in addition to the legacy 20 MHz channel available with other modes.

**Note:** If you have chosen 20 MHz, skip to [Step 4](#).

### Radio

**Global Settings**

TSPEC Violation Interval:  Seconds

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**Basic Settings**

Radio:  Enable

MAC Address: CC:EF:48:87:49:70

Mode:  ▾

Channel Bandwidth:  ▾

Primary Channel:  ▾

Channel:  ▾

Step 3. When the access point is configured to use 40-MHz channel bandwidth, you can specify the location of the primary channel as either the upper half or lower half of the 40-MHz channel. When you choose a 40-MHz channel, the channel choice always refers to the primary channel.

- Upper — Sets the the upper 20 MHz channel in the 40 MHz band as the Primary Channel.
- Lower — Sets the lower 20 MHz channel in the 40 MHz band as the Primary Channel.

The screenshot displays a configuration page with two sections: 'Basic Settings' and 'Advanced Settings'. In the 'Basic Settings' section, the 'Radio' is enabled, the 'Mode' is set to '802.11a/n', and the 'Channel Bandwidth' is '20 MHz'. The 'Primary Channel' is set to 'Lower'. The 'Channel' dropdown menu is open, showing 'Auto' as the selected option, with a list of other channels: 36, 40, 44, 48, 149, 153, 157, 161, and 165. The 'Advanced Settings' section includes 'Short Guard Interval Supported', 'Protection', and 'Beacon Interval' (in milliseconds).

Step 4. Choose the portion of the radio spectrum that the radio uses to transmit and receive from the Channel drop-down list. The drop-down list has auto, and the channels which range from 1 to 11. Please make sure that you do not have same channel and SSID on multiple access points. The channels are divided in the between the lower primary channel and the upper primary channel. The first 1 to 7 channels are under lower primary channel, and 5 to 11 are under upper primary channel. If you choose 802.11 b/g then all the channels from 1 to 11 are shown in the Channel drop-down list. For the modes 802.11a, 802.11a/n and 5 GHz 802.11n channels are different when compare to rest of the modes.

**Note:** If auto is chosen, the WAP scans the available channels and chooses a channel where the least traffic is detected.

Step 5. Click **Save** to save the settings.