



## XOR Radio Support

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## Information About Dual-Band Radio Support

The Dual-Band (XOR) radio in APs like Cisco 2800, 3800, 4800, and the 9100 series AP models offers the ability to serve 2.4-GHz or 5-GHz bands or passively monitor both the bands on the same AP. These APs can be configured to serve clients in 2.4-GHz and 5-GHz bands, or serially scan both 2.4-GHz and 5-GHz bands on the flexible radio while the main 5-GHz radio serves clients.

Cisco APs are designed to support dual 5-GHz band operations with the *i* model supporting a dedicated Macro/Micro architecture and the *e* and *p* models supporting Macro/Macro. When a radio moves between bands (from 2.4GHz to 5GHz and vice versa), clients need to be steered to get an optimal distribution across radios. When an AP has two radios in the 5-GHz band, the radios operate as a macro cell and micro cell. Macro-micro client steering is used to steer a client between macro and micro.

The XOR radio support can be steered manually or automatically:

- Manual steering of a band on a radio—The band on the XOR radio can only be changed manually.
- Automatic steering of the band on the radio—The band on the XOR radio is changed by the Flexible Radio Assignment (FRA) feature that monitors and changes the band as per site requirements.



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**Note** RF measurement will not run when a static channel is configured on slot 1. Due to this, the dual band radio slot 0 will move only with 5-GHz radio and not to the monitor mode.

When slot 1 radio is disabled, RF measurement will not run, and the dual band radio Slot 0 will be only on 2.4-GHz radio.

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# Configuring Default XOR Radio Support

## Before you begin



**Note** The default radio points to the XOR radio hosted on slot 0.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device# <b>enable</b>	Enters privileged EXEC mode.
<b>Step 2</b>	<b>ap name <i>ap-name</i> dot11 dual-band antenna ext-ant-gain <i>antenna_gain_value</i></b> <b>Example:</b> Device# ap name <i>ap-name</i> dot11 dual-band antenna ext-ant-gain 2	Configures the 802.11 dual-band antenna on a specific Cisco access point.  <i>antenna_gain_value</i> : The valid range is from 0 to 40.
<b>Step 3</b>	<b>ap name <i>ap-name</i> [no] dot11 dual-band shutdown</b> <b>Example:</b> Device# ap name <i>ap-name</i> dot11 dual-band shutdown	Shuts down the default dual-band radio on a specific Cisco access point.  Use the <b>no</b> form of the command to enable the radio.
<b>Step 4</b>	<b>ap name <i>ap-name</i> dot11 dual-band role manual client-serving</b> <b>Example:</b> Device# ap name <i>ap-name</i> dot11 dual-band role manual client-serving	Switchs to client-serving mode on the Cisco access point.
<b>Step 5</b>	<b>ap name <i>ap-name</i> dot11 dual-band band 24ghz</b> <b>Example:</b> Device# ap name <i>ap-name</i> dot11 dual-band band 24ghz	Switchs to 2.4-GHz radio band.
<b>Step 6</b>	<b>ap name <i>ap-name</i> dot11 dual-band txpower {<i>transmit_power_level</i>   auto}</b> <b>Example:</b>	Configures the transmit power for the radio on a specific Cisco access point.

	Command or Action	Purpose
	<pre>Device# ap name <i>ap-name</i> dot11 dual-band txpower 2</pre>	<p><b>Note</b> When an FRA-capable radio (slot 0 on 9120 AP[for instance]) is set to Auto, you cannot configure static channel and Txpower on this radio.</p> <p>If you want to configure static channel and Txpower on this radio, you will need to change the radio role to Manual Client-Serving mode.</p>
<b>Step 7</b>	<p><b>ap name <i>ap-name</i> dot11 dual-band channel <i>channel-number</i></b></p> <p><b>Example:</b></p> <pre>Device# ap name <i>ap-name</i> dot11 dual-band channel 2</pre>	<p>Enters the channel for the dual band.</p> <p><i>channel-number</i>—The valid range is from 1 to 173.</p>
<b>Step 8</b>	<p><b>ap name <i>ap-name</i> dot11 dual-band channel auto</b></p> <p><b>Example:</b></p> <pre>Device# ap name <i>ap-name</i> dot11 dual-band channel auto</pre>	<p>Enables the auto channel assignment for the dual-band.</p>
<b>Step 9</b>	<p><b>ap name <i>ap-name</i> dot11 dual-band channel width {20 MHz   40 MHz   80 MHz   160 MHz}</b></p> <p><b>Example:</b></p> <pre>Device# ap name <i>ap-name</i> dot11 dual-band channel width 20 MHz</pre>	<p>Chooses the channel width for the dual band.</p>
<b>Step 10</b>	<p><b>ap name <i>ap-name</i> dot11 dual-band cleanair</b></p> <p><b>Example:</b></p> <pre>Device# ap name <i>ap-name</i> dot11 dual-band cleanair</pre>	<p>Enables the Cisco CleanAir feature on the dual-band radio.</p>
<b>Step 11</b>	<p><b>ap name <i>ap-name</i> dot11 dual-band cleanair band {24 GHz   5 GMHz}</b></p> <p><b>Example:</b></p> <pre>Device# ap name <i>ap-name</i> dot11 dual-band cleanair band 5 GHz  Device# ap name <i>ap-name</i> [no] dot11 dual-band cleanair band 5 GHz</pre>	<p>Selects a band for the Cisco CleanAir feature.</p> <p>Use the <b>no</b> form of this command to disable the Cisco CleanAir feature.</p>
<b>Step 12</b>	<p><b>ap name <i>ap-name</i> dot11 dual-band dot11n antenna {A   B   C   D}</b></p> <p><b>Example:</b></p> <pre>Device# ap name <i>ap-name</i> dot11 dual-band dot11n antenna A</pre>	<p>Configures the 802.11n dual-band parameters for a specific access point.</p>

	Command or Action	Purpose
<b>Step 13</b>	<b>show ap name <i>ap-name</i> auto-rf dot11 dual-band</b>  <b>Example:</b> <pre>Device# show ap name <i>ap-name</i> auto-rf dot11 dual-band</pre>	Displays the auto-RF information for the Cisco access point.
<b>Step 14</b>	<b>show ap name <i>ap-name</i> wlan dot11 dual-band</b>  <b>Example:</b> <pre>Device# show ap name <i>ap-name</i> wlan dot11 dual-band</pre>	Displays the list of BSSIDs for the Cisco access point.

## Configuring XOR Radio Support for the Specified Slot Number (GUI)

### Procedure

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- Step 1** Click **Configuration > Wireless > Access Points**.
- Step 2** In the **Dual-Band Radios** section, select the AP for which you want to configure dual-band radios.
- The AP name, MAC address, CleanAir capability and slot information for the AP are displayed. If the Hyperlocation method is HALO, the antenna PID and antenna design information are also displayed.
- Step 3** Click **Configure**.
- Step 4** In the **General** tab, set the **Admin Status** as required.
- Step 5** Set the **CleanAir Admin Status** field to Enable or Disable.
- Step 6** Click **Update & Apply to Device**.
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## Configuring XOR Radio Support for the Specified Slot Number

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b>  <b>Example:</b> <pre>Device# enable</pre>	Enters privileged EXEC mode.

	Command or Action	Purpose
Step 2	<b>ap name</b> <i>ap-name</i> <b>dot11 dual-band slot 0 antenna ext-ant-gain</b> <i>external_antenna_gain_value</i> <b>Example:</b> Device# <b>ap name AP-SIDD-A06 dot11 dual-band slot 0 antenna ext-ant-gain 2</b>	Configures dual-band antenna for the XOR radio hosted on slot 0 for a specific access point. <i>external_antenna_gain_value</i> - Is the external antenna gain value in multiples of .5 dBi unit. The valid range is from 0 to 40.
Step 3	<b>ap name</b> <i>ap-name</i> <b>dot11 dual-band slot 0 band {24ghz   5ghz}</b> <b>Example:</b> Device# <b>ap name AP-SIDD-A06 dot11 dual-band slot 0 band 24ghz</b>	Configures current band for the XOR radio hosted on slot 0 for a specific access point.
Step 4	<b>ap name</b> <i>ap-name</i> <b>dot11 dual-band slot 0 channel {channel_number   auto   width [160   20   40   80]}</b> <b>Example:</b> Device# <b>ap name AP-SIDD-A06 dot11 dual-band slot 0 channel 3</b>	Configures dual-band channel for the XOR radio hosted on slot 0 for a specific access point. <i>channel_number</i> - The valid range is from 1 to 165.
Step 5	<b>ap name</b> <i>ap-name</i> <b>dot11 dual-band slot 0 cleanair band {24Ghz   5Ghz}</b> <b>Example:</b> Device# <b>ap name AP-SIDD-A06 dot11 dual-band slot 0 cleanair band 24Ghz</b>	Enables CleanAir features for dual-band radios hosted on slot 0 for a specific access point.
Step 6	<b>ap name</b> <i>ap-name</i> <b>dot11 dual-band slot 0 dot11n antenna {A   B   C   D}</b> <b>Example:</b> Device# <b>ap name AP-SIDD-A06 dot11 dual-band slot 0 dot11n antenna A</b>	Configures 802.11n dual-band parameters hosted on slot 0 for a specific access point. Here, <b>A</b> - Enables antenna port A. <b>B</b> - Enables antenna port B. <b>C</b> - Enables antenna port C. <b>D</b> - Enables antenna port D.
Step 7	<b>ap name</b> <i>ap-name</i> <b>dot11 dual-band slot 0 role {auto   manual [client-serving   monitor]}</b> <b>Example:</b> Device# <b>ap name AP-SIDD-A06 dot11 dual-band slot 0 role auto</b>	Configures dual-band role for the XOR radio hosted on slot 0 for a specific access point. The following are the dual-band roles: <ul style="list-style-type: none"> <li>• <b>auto</b>- Refers to the automatic radio role selection.</li> <li>• <b>manual</b>- Refers to the manual radio role selection.</li> </ul>
Step 8	<b>ap name</b> <i>ap-name</i> <b>dot11 dual-band slot 0 shutdown</b>	Disables dual-band radio hosted on slot 0 for a specific access point.

	Command or Action	Purpose
	<p><b>Example:</b></p> <pre>Device# ap name AP-SIDD-A06 dot11 dual-band slot 0 shutdown</pre> <pre>Device# ap name AP-SIDD-A06 [no] dot11 dual-band slot 0 shutdown</pre>	Use the <b>no</b> form of this command to enable the dual-band radio.
<b>Step 9</b>	<p><b>ap name</b> <i>ap-name</i> <b>dot11 dual-band slot 0 txpower</b> {<i>tx_power_level</i>   <b>auto</b>}</p> <p><b>Example:</b></p> <pre>Device# ap name AP-SIDD-A06 dot11 dual-band slot 0 txpower 2</pre>	<p>Configures dual-band transmit power for XOR radio hosted on slot 0 for a specific access point.</p> <ul style="list-style-type: none"> <li>• <i>tx_power_level</i>- Is the transmit power level in dBm. The valid range is from 1 to 8.</li> <li>• <b>auto</b>- Enables auto-RF.</li> </ul>