



# Cisco Receiver Start of Packet

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## Information About Receiver Start of Packet Detection Threshold

The Receiver Start of Packet (Rx SOP) Detection Threshold feature determines the Wi-Fi signal level in dBm at which an access point's radio demodulates and decodes a packet. As the Wi-Fi level increases, the radio sensitivity decreases and the receiver cell size becomes smaller. Reduction of the cell size affects the distribution of clients in the network.

Rx SOP is used to address clients with weak RF links, sticky clients, and client load balancing across access points. Rx SOP helps to optimize the network performance in high-density deployments, such as stadiums and auditoriums where access points need to optimize the nearest and strongest clients.

## Restrictions for Rx SOP

- Rx SOP configuration is not applicable to the third radio module pluggable on Cisco Aironet Series APs.
- Rx SOP configurations are supported only in Local, FlexConnect, Bridge, and Flex+Bridge modes.
- Rx SOP configurations are not supported in the FlexConnect+PPPoE, FlexConnect+PPPoE-wIPS, and FlexConnect+OEAP submodes.

The following table shows the permitted range for the Rx SOP threshold.

**Table 1: Rx SOP Threshold**

| Radio Band | Threshold High | Threshold Medium | Threshold Low |
|------------|----------------|------------------|---------------|
| 2.4 GHz    | -79 dBm        | -82 dBm          | -85 dBm       |
| 5 GHz      | -76 dBm        | -78 dBm          | -80 dBm       |

## Configuring Rx SOP (CLI)

### Procedure

|               | Command or Action  | Purpose   |
|---------------|--|---|
| <b>Step 1</b> | <b>configure terminal</b><br><br><b>Example:</b><br><br>Device# <code>configure terminal</code>  | Enters global configuration mode.                       |
| <b>Step 2</b> | <b>ap dot11 {24ghz   5ghz} rx-sop threshold {auto   custom   high   low   medium}</b><br><br><b>Example:</b><br><br>Device(config)# <code>ap dot11 5ghz rx-sop threshold high</code> | Configures the 802.11bg/802.11a radio Rx SOP threshold. |
| <b>Step 3</b> | <b>end</b>   | Returns to privileged EXEC mode.                        |
| <b>Step 4</b> | <b>show ap dot11 {24ghz   5ghz} high-density</b><br><br><b>Example:</b><br><br>Device# <code>show ap dot11 5ghz high-density</code>  | Displays the 802.11bg/802.11a high-density parameters.  |
| <b>Step 5</b> | <b>show ap summary</b><br><br><b>Example:</b><br><br>Device# <code>show ap summary</code>  | Displays a summary of all the connected Cisco APs.      |

## Customizing RF Profile (CLI)

### Procedure

|               | Command or Action  | Purpose                                    |
|---------------|--|--|
| <b>Step 1</b> | <b>configure terminal</b><br><br><b>Example:</b><br><br>Device# <code>configure terminal</code>  | Enters global configuration mode.          |
| <b>Step 2</b> | <b>ap dot11 {24ghz   5ghz } rf-profile <i>profile-name</i></b><br><br><b>Example:</b><br><br>Device(config)# <code>ap dot11 24ghz rf-profile AHS_2.4ghz</code> | Configures the 802.11a and 11b parameters. |

|               | Command or Action  | Purpose  |
|---------------|--|--|
| <b>Step 3</b> | <b>high-density rx-sop threshold {auto   custom   high   low   medium}</b><br><br><b>Example:</b><br>Device(config-rf-profile) # <b>high-density rx-sop threshold high</b> | Configures the 802.11bg, 802.11a high-density parameters.  |
| <b>Step 4</b> | <b>show ap summary</b><br><br><b>Example:</b><br>Device# <b>show ap summary</b>  | Displays a summary of all the connected Cisco APs.   |
| <b>Step 5</b> | end  | Returns to privileged EXEC mode.<br><br><b>Note</b> <ul style="list-style-type: none"> <li>• Irrespective of radio mode, the controller configures the radio with configured RX-SOP value. The AP determines whether to use the configured RX-SOP value.</li> <li>• For the XOR radio (Slot 0), when the AP is in monitor mode the RX-SOP value that gets pushed to AP depends on the band it was operating before moving to monitor mode (basically if radio operating band is 24g then RX-SOP params picked from 24GHz RF profile (or default rf-profile). If it was in 5g then RX-SOP params picked from 5GHz RF profile (or default rf-profile) configured for the AP).</li> </ul> |

