



Bluetooth Low Energy

- [Information About Bluetooth Low Energy, on page 1](#)
- [Enabling Bluetooth Low Energy Beacon, on page 2](#)

Information About Bluetooth Low Energy

Bluetooth low energy (BLE) is a wireless personal area network technology aimed at enhancing location services for mobile devices. The small bluetooth tag devices placed at strategic locations transmit universally unique identifiers (UUIDs) and, Major and Minor fields as their identity. These details are picked up by bluetooth-enabled smartphones and devices. The location information of these devices are sent to the corresponding back-end server. Relevant advertisements and other important information are then pushed to the devices using this location-specific information.

The BLE feature also provides BLE beacon management support and specifies its behavior when used within the Cisco WLAN system. Using the Cisco CleanAir, an access point can identify an iBeacon signal and decode the payload content. The extracted tag device details are used for better management of the device.

By treating a tag device as an interferer and using the existing system capabilities, such as interference location, the tag device can be located on a map display in a wireless LAN deployment and its movement monitored. Besides this, information on missing tags can also be obtained. This feature can determine rogue and malicious tags using the unique identifier associated with each tag (or family of tags) against a predetermined whitelist from a customer. Using the management function, alerts can be displayed or emailed based on rogue tags, missing tags, or moved tags.

Limitations of BLE Feature

- The wireless infrastructure must support Cisco CleanAir.
- Supports a maximum of only 250 unique BLE beacons (cluster entries) and 1000 device entries.
- The BLE feature on the Cisco Aironet 3700 Series Access Points with Halo module gets deactivated when NTP is configured (This behavior is also observed when Cisco CMX is not present.) So, the legacy BLE does not work when Cisco CMX is present or not configured for Hyperlocation.

Areas of Use

Since the BLE feature provides granular location details of devices (smart phones or bluetooth-enabled devices) that helps push context-sensitive advertising and other information to users. Possible areas of application include retail stores, museums, zoo, healthcare, fitness, security, advertising, and so on.

Enabling Bluetooth Low Energy Beacon

Bluetooth low energy (BLE) detection is enabled by default. Use the procedure given below to enable BLE when it is disabled.

Before you begin

- The wireless infrastructure must support Cisco CleanAir.
- Cisco CleanAir configuration and show commands are available only in Mobility Controller (MC) mode.

Procedure

	Command or Action	Purpose
Step 1	configure terminal Example: Controller# configure terminal	Enters global configuration mode.
Step 2	[no] ap dot11 24ghz cleanair device [ble-beacon] Example: Controller(config)# ap dot11 24ghz cleanair device ble-beacon	Enables the BLE feature on the 802.11b network. Use the no form of the command to disable BLE feature on the 802.11b network.
Step 3	exit Example: Controller(config)# exit	Returns to privileged EXEC mode.
Step 4	show ap dot11 24ghz cleanair config Example: Controller# show ap dot11 24ghz cleanair config Interference Device Settings: Interference Device Reporting..... : Enabled Bluetooth Link..... : Enabled Microwave Oven..... : Enabled BLE Beacon..... : Enabled	(Optional) Displays the BLE beacon configuration.

	Command or Action	Purpose
Step 5	show ap dot11 24ghz cleanair device type ble-beacon Example: <pre> Controller# show ap dot11 24ghz cleanair device type ble-beacon DC = Duty Cycle (%) ISI = Interference Severity Index (1-Low Interference, 100-High Interference) RSSI = Received Signal Strength Index (dBm) DevID = Device ID No ClusterID DevID Type AP Name ISI RSSI DC Channel 1 2c:92:80:00:00:22 0xa001 BLE Beacon 5508_3_AP3600_f839 -- -74 0 unknown </pre>	(Optional) Displays the BLE beacon device-type information.

