



# Configuring and Validating High Efficiency (802.11 ax)

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## Configuring and Validating High Efficiency

When High Efficiency (HE) is enabled, it is backward compatible with 802.11ac. To enable or disable 802.11ax HE, the following list is supported.

- Cisco URWB HE supports 20/40/80 MHz bandwidth for slot 1.
- Cisco URWB HE supports 20/40/80/160 MHz bandwidth for slot 2.
- Cisco URWB, HE defaults setting is disabled.
- HE negotiation is only supported between devices with HE enabled.

To enable High Efficiency mode, use the following CLI commands.

```
Device# configure dot11Radio [1|2] high-efficiency enable
Device# configure dot11Radio [1|2] mcs maxmcs <mcs index in integer or string>
```



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**Note** Need to configure maxmcs as 11 by CLI “configure dot11Radio 1/2 mcs maxmcs 11” since default maxmcs is 9.

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To disable High Efficiency mode, use the following CLI commands:

```
Device# configure dot11Radio [1|2] high-efficiency disable
default maxmcs is 9.
```

To validate High Efficiency mode, use the following show command.

```
Device# show dot11Radio 1 config
Maximum tx mcs : 9
High-Efficiency : Enabled
Maximum tx nss : 2
RTS Protection : disabled
guard-interval : 800ns
```

```
Device# show dot11Radio 2 config
Maximum tx mcs : 9
High-Efficiency : Enabled
Maximum tx nss : 2
RTS Protection : disabled
guard-interval : 800ns
```

```
Device# show eng-stats
```

WLAN1 Rx:

```
FC:58:9A:16F8:52 rate 1201 MCS 11/2 HE80/G1(800ns) ssn 48 rssi-48 received
```

WLAN1 Tx:

```
FC:58:9A:16F8:52 rate 1201 MCS 11/2 HE80/G1(800ns) sent 195612 failed 0
```

WLAN2 Rx:


```
FC:58:9A:16F8:13 rate 1201 MCS 11/2 HE80/G1(800ns) ssn 50 rssi-46 received
```

WLAN2 Tx:

```
FC:58:9A:16F8:13 rate 864 MCS 11/2 HE80/G1(800ns) sent 390797 failed 1
```

## Configuring Global Gateway from GUI

Global gateway mode automatically enforces MPLS (Multi-Protocol Label Switching) layer 3 and radio-off and radio status cannot be changed in global gateway mode. The below images show the GUI configuration of global gateway mode.



ULTRA RELIABLE  
WIRELESS BACKHAUL

Cisco URWB IW9167EH Configurator  
5.21.201.72 - MESH END MODE

**IOTUD IW** Offline

**FM-QUADRO**

**GENERAL SETTINGS**

- general mode
- wireless radio
- antenna alignment and stats

**NETWORK CONTROL**

- advanced tools

**ADVANCED SETTINGS**

- advanced radio settings
- static routes
- allowlist / blocklist
- multicast
- snmp
- radius
- ntp
- l2tp configuration
- vlan settings
- Fluidity
- misc settings
- smart license

**MANAGEMENT SETTINGS**

- remote access
- firmware upgrade
- status
- configuration settings
- reset factory default
- reboot
- logout

**GENERAL MODE**

**General Mode**

Global Gateway mode automatically enforces MPLS layer 3 and radio-off. Radio status cannot be changed in Global Gateway mode.

mesh point  
 mesh end  
 gateway

Radio-off:  Fluidity ▼

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**LAN Parameters**

Local IP:

Local Netmask:

Default Gateway:

Local Dns 1:

Local Dns 2:

Reset
Save

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**WIRELESS RADIO**

Wireless Settings

"Shared Passphrase" is an alphanumeric string or special characters excluding "[apex]" "[double apex]" "[backtick]" "\$[dollar]" "[equal]" "[backslash]" and whitespace (e.g. "mysecurecarnet") that identifies your network. It MUST be the same for all the Cisco URWB units belonging to the same network.

Shared Passphrase:

In order to establish a wireless connection between Cisco URWB units, they need to be operating on the same frequency.

Radio 1 Settings

Role:  ▼

Radio 2 Settings

Role:  ▼

Reset
Save

## FLUIDITY

## Fluidity Settings

The unit can operate in 3 modes: Infrastructure, Infrastructure (wireless relay), Vehicle.  
The unit must be set as Infrastructure when it acts as the entry point of the infrastructure for the mobile vehicles and it is connected to a wired network (backbone) which possibly includes other Infrastructure nodes. The unit must be set as Infrastructure (wireless relay) ONLY when it is used as a wireless relay agent to other Infrastructure units. In this operating mode, the unit MUST NOT be connected to the wired network backbone as it will use the wireless connection to relay the data coming from the mobile units.  
The unit must be set as Vehicle when it is mobile. Vehicle ID must be set ONLY when the unit is configured as Vehicle. Specifically, Vehicle ID must be a unique among all the mobile units installed on the same vehicle. Unit installed on different vehicles must use different Vehicle IDs.  
The Network Type field must be set according to the general network architecture. Choose Flat if the mesh and the infrastructure networks belong to a single layer-2 broadcast domain. Use Multiple Subnets if they are organized as different layer-3 routing domains.

Unit Role: Infrastructure ▾

Network Type: Multiple subnets ▾

The following advanced settings allow to fine-tune the performance of the system depending on the specific environment. Please do not alter this settings unless you have read the manual first and you know what you are doing.

The Handoff Logic controls the algorithm used by a mobile radio to select the best infrastructure point to connect to. In Normal mode, the point providing the strongest signal is selected. In Load Balancing mode, the mobile radio prefers the point which provides the best balance between signal strength and amount of traffic carried.

Handoff Logic: Standard ▾

Reset

Save